07.
Cultural Heritage

7. Cultural Heritage

7.1 Introduction

7.1.1 This chapter of the EIA Report assesses the likely significant effects of the Project on archaeology and cultural heritage. The work comprises a New Build Overhead Line (hereafter referred to as the 'WB Route'), the reconductoring of three existing Overhead Lines (hereafter referred to as the 'ZG Route', the 'XX Route' and the 'XR Route'), partial undergrounding of overhead lines ('AA Route'), decommissioning of an overhead line (hereafter referred to as the CB Route), and upgrades to a number of substations (Bonnybridge, Wishaw, Cumbernauld, Easterhouse and Denny North), with full details available in **Chapter 4: Project Description**.

7.1.2 Cultural heritage in the context of this report refers to the above and below-ground archaeological resource, built heritage, the historic landscape, and any other elements which may contribute to the historical and cultural heritage of the area.

7.1.3 The aim of this chapter is to provide:

- A summary of the baseline conditions of the various components of the Project;
- An assessment of the likely significant effects of the various components of the Project on cultural heritage; and
- Additional mitigation measures as required.

7.1.4 The term the 'Project' or simply the 'Site', refers to the entire area shown in Figure 4.1, however, each element of the Project is referred to by its unique name (i.e. 'WB Route') for ease.

7.1.5 The chapter draws on the following technical figures and appendices:

- Figure 7.1: Designated assets within the Study Area adopted for the baseline study of the Project;
- Figure 7.2: Non-designated Assets within the Study Area adopted for the baseline study of the Project;
- Figure 7.3: Designated and non-designated assets within the 500m Study Area for the WB Route.
- Figure 7.4: Designated Heritage Assets within the wider Study Area adopted for the assessment of impacts on setting resulting from the WB Route
- Figure 7.5: Designated and non-designated assets within the 500m Study Area for the ZG Route.
- Figure 7.6: Designated and non-designated assets within the 500m Study Area for the XX Route.
- Figure 7.7: Designated and non-designated assets within the 500m Study Area for the XR Route.

- Figure 7.8: Designated and non-designated assets within the 500m Study Area for the CB Route.
- Figure 7.9: Designated and non-designated assets within the 500m Study Area for the AA Route Undergrounding.
- Figure 7.10: Designated and non-designated Heritage Assets within the 250m Study Area for the Denny North Substation Works.
- Figure 7.11: Designated and non-designated Heritage Assets within the 250m Study Area for the Bonnybridge Substation Extension.
- Figure 7.12: Designated and non-designated Heritage Assets within the 250m Study Area for the Easterhouse Substation Extension.
- Figure 7.13: Designated and non-designated Heritage Assets within the 250m Study Area for the Newarthill Substation Extension.
- Figure 7.14: Designated and non-designated Heritage Assets within the 250m Study Area for the Wishaw Substation Extension.
- Appendix 7.1 – Gazetteer of designated and non-designated assets;
- Appendix 7.2 – Site Photographs;
- Appendix 7.3 – Archaeological Potential and Disturbed Ground;
- Appendix 7.4 – Antonine Wall World Heritage Site Heritage Impact Assessment (HIA) and;
- Volume 4 – Visualisations.

7.2 Legislation and Policy

7.2.1 This section identifies the key legislation, policy and guidance relevant to the scope and methodology for the cultural heritage assessment.

Legislation

7.2.2 There are several statutory pieces of legislation governing the approach to cultural heritage. The principal legislation relevant to this assessment comprises:

- As detailed in Chapter 1, the Applicant will also apply for deemed planning permission under section 57 (2) of the Town and Country Planning (Scotland) Act 1997 ('TCPA') for the Substation Works (except the Cumbernauld Substation works) and the Ancillary Works (except the Distribution Line Diversion Works) and associated works (such as [temporary infrastructure and access tracks]) ('deemed planning permission')[1];
- The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013 (as amended by the Town and Country Planning (Historic Environment Scotland) Amendment Regulations 2015)[2];
- Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997[3];

[1] Historic Environment Scotland (2023) Our Past, Our Future: The Strategy for Scotland's Historic Environment, Edinburgh: Historic Environment Scotland
[2] PastMap [Online] available from: https://www.pastmap.org.uk/
[3] Historic Environment Scotland. [Online] available from: www.historicenvironment.scot

- Ancient Monuments and Archaeological Areas Act 1979[4]; and
- Historic Environment Scotland Act 2014[5].

National Planning Policy

7.2.3 The principal national planning policy documents consist of:

- National Planning Framework 4 (NPF4)[6];
- Historic Environment Policy for Scotland (HEPS)[7];
- Our Past, Our Future - The Strategy for Scotland's Historic Environment[8]; and
- Planning Advice Note (PAN) 2/2011 – Planning and Archaeology[9];
- PAN 71 – Conservation Area Management[10]; and
- The Historic Environment Scotland 'Managing Change in the Historic Environment' series of guidance notes (particularly *Managing Change in the Historic Environment: Setting*)[11].

7.2.4 A summary of the individual policies relevant to cultural heritage and this assessment are set out below.

National Planning Framework 4 (NPF4)

7.2.5 NPF4 sets out the national spatial strategy for Scotland, and includes spatial principles, regional priorities, national developments and national planning policy. It forms part of the Development Plan alongside the relevant local development plan ("LDP"). NPF4 Policy 7 concerns the historic environment. The Project is given National Development status by NPF4, under Annex B, Category 3 'Strategic Renewable Electricity Generation and Transmission Infrastructure'. The key policies relevant for this assessment are as follows:

7.2.6 Policy 7(a) states that *'Development proposals with a potentially significant impact on historic assets or places will be accompanied by an assessment which is based on an understanding of the cultural significance of the historic asset and/or place. The assessment should identify the likely visual or physical impact of any proposals for change, including cumulative effects and provide a sound basis for managing the impacts of change.' [and that] 'Proposals should also be informed by national policy and guidance on managing change in the historic environment, and information held within Historic Environment Records.'*

7.2.7 Policy 7(h) states regarding scheduled monuments that *'Development proposals affecting scheduled monuments will only be supported where: i. direct impacts on the scheduled monument are avoided; ii. significant adverse impacts on the integrity of the setting of a*

[4] National Library of Scotland [Online] available from: https://maps.nls.uk/
[5] Historic Environment Scotland (2019) *Historic Environment Policy for Scotland,* Edinburgh: Historic Environment Scotland.
[6] Historic Environment Scotland (2019) *Designation Policy and Selection Guidance,* Edinburgh: Historic Environment Scotland.
[7] Chartered Institute for Archaeologists (2020) *Standard and Guidance for Historic Environment Desk-Based Assessment,* Reading: CiFA.
[8] BGS Viewer available at BGS Geology Viewer (BETA), accessed 20th November 2025.
[9] PAN is now withdrawn. There is no replacement at time of EIA Report submission. The PAN notice was applicable at the time of EIA Report production.
[10] PAN is now withdrawn. There is no replacement at time of EIA Report submission. The PAN notice was applicable at the time of EIA Report production.
[11] Derek Alexander (2015), The Iron Age, available online: https://scarf.scot/wp-content/uploads/sites/15/2022/04/05_IronAge.pdf Page 12

scheduled monument are avoided; or iii. exceptional circumstances have been demonstrated to justify the impact on a scheduled monument and its setting and impacts on the monument or its setting have been minimised.'

7.2.8 In relation to non-designated historic environment assets, Policy 7(o) states:

'*Non-designated historic environment assets, places and their setting should be protected and preserved in situ wherever feasible. Where there is potential for non-designated buried archaeological remains to exist below a site, developers will provide an evaluation of the archaeological resource at an early stage so that planning authorities can assess impacts*'.

7.2.9 Policy 7 also states that:

'*Where impacts cannot be avoided, they should be minimised. Where it has been demonstrated that avoidance or retention is not possible, excavation, recording, analysis, archiving, publication, and activities to provide public benefit may be required through the use of conditions or legal / planning obligations.*'

7.2.10 With regard to previously unknown archaeological assets and unexpected archaeological discoveries during construction, the policy states if *'new archaeological discoveries are made during the course of development works, they must be reported to the planning authority to enable agreement on appropriate inspection, recording and mitigation measures'.*

7.2.11 Policy 11(e) relates to energy and as such is also relevant to the assessment of the Project, relating to impacts resulting from renewable developments and states:

'In addition, project design and mitigation will demonstrate how the following impacts are addressed:

ii. significant landscape and visual impacts, recognising that such impacts are to be expected for some forms of renewable energy. Where impacts are localised and/ or appropriate design mitigation has been applied, they will generally be considered to be acceptable; … [and]

vii. impacts on historic environment'

Historic Environment Policy for Scotland (HEPS)

7.2.12 HEPS is a non-statutory policy statement that should be taken into account when determining planning applications that affect the historic environment. The following policies are relevant to this assessment.

7.2.13 Policy HEP1 recognises that development proposals and planning decisions that affect any part of the historic environment should be informed by an understanding of the cultural heritage significance of the site and its historic environment.

7.2.14 HEP2 and HEP3 relate to managing change in the historic environment. HEP2 states that decisions that affect the historic environment, 'should ensure that its understanding and enjoyment as well as its benefits are secured for present and future generations'. HEP3 states that proposals should protect and promote the historic environment but, if impact was unavoidable, it should be minimised and steps taken, 'to demonstrate that alternatives have been explored, and mitigation measures should be put in place'.

7.2.15 HEP4 relates to measures for individual heritage assets and encourages opportunities for enhancement to be put forward, where appropriate. The policy reiterates that if detrimental impact was unavoidable then it should be demonstrated that alternatives have been explored, and mitigation measures should be in place.

Our Past, Our Future

7.2.16 Our Past, Our Future was released by HES in June 2023[12] replaces the previous Historic Environment Scotland strategy Our Place in Time (2014), and represents the new, national five-year strategy for the historic environment. The strategy aims to ensure that the historic environment is sustained and enhanced whilst delivering Scotland's priorities of delivering the transition to net zero; empowering resilient and inclusive communities, and building a wellbeing economy.

7.2.17 The three main priorities identified in this document are:

- Priority 1: Delivering the transition to net zero;
- Priority 2: Empowering resilient and inclusive communities and places; and;
- Priority 3: Building a wellbeing economy.

Local Planning Policy

7.2.18 The Denny North Substation Works and Bonnybridge Substation Extension areas of the Project, as well as the ZG Route, and northern ends of the CB Route and WB Route are located in the local authority area of Falkirk. The Falkirk LDP 2 was adopted in 2020[12] the following policies within the LDP relevant to this chapter are as follows:

- Policy PE05 Antonine Wall, supported by Supplementary Guidance SG11 'Frontiers of the Roman Empire (Antonine Wall) World Heritage Site'.
- Policy PE06 Archaeological Sites;
- Policy PE07 Listed Buildings;
- Policy PE12 Canals.

7.2.19 The Cumbernauld Substation, Wishaw Substation area, as well as the XX Route, and southern elements of the CB Route and WB Route are located in the local authority area of North Lanarkshire. Planning policy relevant to this assessment from the local authority area is summarised below.

7.2.20 The North Lanarkshire LDP was adopted in 2022[13]. The main policy relevant to heritage is Policy PROT B Historic Environment Assessment which states the following:

- That North Lanarkshire Council will, *'protect and create resilient sustainable places by safeguarding historic environment assets'*.
- The policy notes that where possible assets should be preserved *in situ*, however, if removal or impacts cannot be avoided a robust mitigation strategy should be developed.

[12] Historic Environment Scotland (2023) Our Past, Our Future: The Strategy for Scotland's Historic Environment, Edinburgh: Historic Environment Scotland
[13] General Roy Survey available at Georeferenced Maps viewer - Map images - National Library of Scotland, accessed 22nd November 2025.

- The policy states regarding archaeology that *'Development shall preserve archaeological remains in situ and within an appropriate setting. Adverse impact on the integrity of the monument or its setting shall not be permitted unless there are exceptional circumstances.'*

Guidance

7.2.21 The assessment has been undertaken following:

- Chartered Institute for Archaeologists (CIfA) Standards and Guidance for Historic Environment Desk-Based Assessment[14];
- United Nations Educational, Scientific and Cultural Organization (UNESCO) Guidance and Toolkit for Impact Assessments in a World Heritage Context[15];
- Historic Environment Scotland (HES) Managing Change in the Historic Environment: Setting (2020) Historic Environment Scotland.; and
- HES and Scottish Natural Heritage (SNH) Environmental Impact Assessment Handbook.

7.3 Methodology

7.3.1 This section presents the methodology adopted for the assessment of likely impacts on cultural heritage, as well as the sources that have been consulted throughout the preparation of this chapter, and the consultation that has been undertaken.

Consultation

7.3.2 Consultation has been undertaken with stakeholders as part of the assessment process, with details provided in Table 7.1 below.

Table 7-1: Summary of Consultation Responses and Actions Taken

Date and Stakeholder	Discussion Points	Action Taken
HES; Teams Call 24th September 2020	Meeting to introduce the DWNO project to HES, and the possible interaction with the Antonine Wall element of the Frontiers of the Roman Empire World Heritage Site (WHS).	HES acknowledged the need for the Project, as well as the need for the proposed crossing near Rough Castle due to other constraints such as settlements. HES agreed to undertake a site visit to look at the area on the ground.
HES; Site Visit 19th October 2020	Site visit to the Antonine Wall WHS. Main focus of visit on the Rough Castle area to examine the towers to potentially be removed	HES agreed that the removal of Tower CB035, which is currently located within the WHS, had the potential to improve the setting of the

[14] NRHE Entry available at Cameron Road | Place | trove.scot, accessed 21st November 2025.
[15] NRHE entry available at Castlecary High Wood | Place | trove.scot, accessed 21st November 2025.

Date and Stakeholder	Discussion Points	Action Taken
	(Tower CB035), as well as the possible alignments of a new Overhead Line.	WHS but noted that any works would need to be undertaken in a controlled way and Scheduled Monument Consent (SMC) would be required. HES also noted that a new Overhead Line to the east of Rough Castle had the potential to be less visible in the landscape, although noted that further design information would be required.
HES, Teams Call, 26th August 2024	Meeting to reintroduce the DWNO project and explain changes made following consultation on the preferred option in 2021.	No action
HES; Site Visit 10th July 2025	Site visit to the area around the Antonine Wall. Discussions included potential for physical impacts resulting from various elements of the Projects, as well as the need for Scheduled Monument Consent (SMC).	All works considered as part of the impact assessment. SMC will be obtained for any works undertaken within scheduled aeras.
HES; Emails October and November 2020	Details provided to HES regarding viewpoint photography for heritage.	No action.
HES; Phone call 3rd December 2025.	HES confirmed they were discussing the viewpoint locations, and that they would reply early in 2026.	No action.
HES; Formal response to visualisations, January 2026	HES provided locations of viewpoint photography required to aid the assessment of impacts on	Required wirelines and visualisations supplied in Volume 4 of the EIA Report.

Date and Stakeholder	Discussion Points	Action Taken
	the Antonine Wall WHS. HES agreed that wirelines could be provided initially, and this would then determine which locations would require visualisations.	
HES; Formal response to visualisations, 17th March 2026	HES acknowledge receipt of draft visualisations.	No action.
HES; Formal response to visualisations, 30th March 2026	HES provide feedback on the draft visualisations after using them on a site visit.	Updated visualisations produced.
HES; Formal response to visualisations, 8th May 2026	Teams call with HES to agree updates to visualisations. This included wider 180 views from Viewpoints 1-3.	Required wirelines and visualisations supplied in Volume 4 of the EIA Report.
Stirlingshire Archaeological Advisor (SAA) (acting on behalf of Falkirk Council and North Lanarkshire Council); email 25th June 2025	Request confirming if there was an active Historic Environment Record for the Falkirk and North Lanarkshire areas. SAA noted that there was no active HER for the Study Area.	Baseline data collected form the Historic Environment Scotland datasets, as well as the sources listed in Section 7.3.3.
SAA (acting on behalf of Falkirk Council and North Lanarkshire Council); Teams Meeting and email, 7th July 2025	Meeting to introduce SAA to the Project and discuss potential impacts, evaluation, and mitigation. SCC noted that the evaluation requirement would likely consist of evaluation trenching 7% of the development areas (whole of LoD excluding previously developed areas/disturbed areas), as well as targeted metal	A review of areas suitable for evaluation trenching was undertaken. This noted large areas of the Site are covered in woodland which would mean evaluation was not possible.

Date and Stakeholder	Discussion Points	Action Taken
	detector survey and scans of spoil heaps for lithics. Any works within the WHS buffer would be subject to a 100% strip under archaeological supervision.	
SAA (acting on behalf of Falkirk Council and North Lanarkshire Council); Email, 8th September 2025	Email requesting a meeting regarding trenching, as well as confirmation regarding the area of Site that would be subject to 7% evaluation sample. SAA noted a meeting would not be possible until 29th September. SAA also confirmed '*7% of all ground breaking work where it is clear that the area has not been previously disturbed*'.	No action.
SAA (acting on behalf of Falkirk Council and North Lanarkshire Council); Email, 26th September 2025	Information provided to the SAA relating to areas of the Project that might be suitable for archaeological evaluation, as well as areas that had been previously disturbed. This was based on a review of historic mapping, aerial photography and LiDAR data. SAA responded (on the 29th September 2025) to say that he would be unable to review and respond to the note until he had been instructed to work on the project by Falkirk Council	A review of areas suitable for evaluation trenching was undertaken. This noted large areas of the Site are covered in woodland which would mean evaluation was not possible.
SAA (acting on behalf of Falkirk Council and North Lanarkshire Council);	The need for evaluation was discussed with the SAA who stated that all areas would need to be subject to	A review of areas suitable for evaluation trenching was undertaken. This noted large areas of the Site are covered

Date and Stakeholder	Discussion Points	Action Taken
Teams Meeting, 29th September 2025	evaluation trenching unless previously disturbed. SAA acknowledged that the document provided on the 26th September provided useful information, but stated more detail was required including having plans showing the various areas of possible trenching, as well as areas scoped out due to aspects including ecological constraints and previous disturbance (SAA stated shapefiles could not be used, and therefore plans would be required).	in woodland which would mean evaluation was not possible.
SAA (acting on behalf of Falkirk Council and North Lanarkshire Council); Email, 9th October 2025	SAA confirmed that he would also need approval to review information provided from North Lanarkshire Council.	No action.
SAA (acting on behalf of Falkirk Council and North Lanarkshire Council); Email, December 2025	Applicant supplied SAA with document detailing review undertaken to show where archaeological evaluation trenching may be possible, and where works would not be possible/useful due to aspects such as previously disturbed ground, woodland, and ecological constraints.	Document supplied as Appendix 7.3
SAA (acting on behalf of Falkirk Council and North Lanarkshire Council); Email, December 2025	SAA responded to evaluation proposal and agreed with assessment.	No action
SAA (acting on behalf of Falkirk Council and North	Applicant set out proposals for trenching. This would be undertaken in a phased	Evaluation excavation will be used to inform the mitigation. Timing of

Date and Stakeholder	Discussion Points	Action Taken
Lanarkshire Council); Email, 22nd January 2026	approach, with the first phase (Phase 1) focusing on areas of known disturbance (the WB Route), and where the Land Access Team would be able to agree access. SAA replied to state they agreed with this approach.	evaluation trenching has not yet been agreed.
SAA (acting on behalf of Falkirk Council and North Lanarkshire Council); Email, 24th to 26th February 2026	Draft archaeological evaluation trenching plans provided to SAA. SAA content with draft plans.	

7.3.3 In addition to the consultation listed above undertaken as part of the production of this Chapter, further consultation has been undertaken by the Applicant and their contractor to secure Scheduled Monument Consent (SMC) for works relating to the Project within scheduled monuments.

7.3.4 SMC applications granted to date for the 'CB Route' works are as follows:

- SMC Application 300083166: Evaluation trenches at the base of Tower CB035 within 'Antonine Wall, Rough Castle Fort, annexe and military way' (SM90013). SMC granted 16/04/2026
- SMC Application 300086054: Creation of access track within 'Antonine Wall, Rough Castle Fort, annexe and military way' (SM90013). SMC granted 27/05/2026

7.3.5 SMC granted for the SPD (associated with the removal of SAP Static Circuit: SP97213) works are as follows:

- SMC Application 300083236: Dismantling and removal of two lattice towers (Towers BBFK003 and BBFK004) within 'Antonine Wall, Rough Castle to Lime Road, and field system' (SM8244). SMC granted 13/02/2026.
- SMC Application 300064018: Dismantling and removal of the existing SP97222 Cct Woodpoles and the BBFK Woodpole terminal structures within Antonine Wall, Rough Castle to Lime Road, and field system' (SM8244). SMC granted 09/04/2026
- SMC Application 300085458: Dismantling and removal of the existing woodpoles, including all access and reinstatement works within 'Wester Carmuirs, ring ditch settlement 450m SSW of' (SM6413). SMC granted 22/04/2026.

Data Sources

7.3.6 The sources for the heritage baseline include the following:

- PastMap[16];
- Historic Environment Scotland (HES) website including the National Record of the Historic Environment[17];
- Historic mapping on the National Library of Scotland website[18]; and
- Other available online sources.

7.3.7 At the time of writing, neither North Lanarkshire Council or Falkirk Council in which the Site is located, have a publicly available Historic Environment Record (HER), and as such the NRHE (available from HES) was accessed for information relating to previously recorded non-designated assets.

7.3.8 All assets are listed in the gazetteers provided in **Appendix 7.1 – Gazetteer** and shown on Figure 7.1. Assets are referred to in the text by their HES number, with the SM prefix signifying scheduled monuments, the LB prefix signifying listed buildings, the GDL prefix signifying a Garden and Designed Landscape, and the BT prefix signifying a Battlefield. Non-designated assets from the NRHE database have no prefix, while assets recorded as part of the walkover survey and documentary research has the prefix 'AECOM'.

Study Area

7.3.9 Due to the varying nature of the components of the Project, a number of different Study Areas were defined for the various components. These were established in the Scoping Report and are set out below.

7.3.10 The Study Areas to establish the cultural heritage baseline of this report was developed through professional judgement.

7.3.11 A Study Area extending 250 m from the Site was considered suitable for uprated overhead lines ZG, XX and XR. For the New-Build Overhead Line (WB Route) and the removal of CB route, a study area of 500 m from the Project was considered suitable.

7.3.12 A Study Area of 250 m from the Site was considered appropriate for non-designated assets and 500 m for designated assets for Substation Sites (Bonnybridge, Wishaw, Cumbernauld, and Denny North).

7.3.13 In terms of assessing changes to the setting of designated assets for the New-Build Overhead Line, a 2 km Study Area was assessed as appropriate. This was as a result of the visibility of the Overhead Line in the landscape. For the Substation Sites (Bonnybridge, Wishaw, Cumbernauld, and Denny North) a 500 m Study Area was assessed as appropriate. This approach was taken in recognition that high value heritage assets have a higher sensitivity to change and greater potential for their settings to extend over a larger area as the New-Build Overhead Line comprises steel towers up to 63m tall which may result in impacts over wider area compared to other components of the Project which are unlikely to have setting impacts or where setting impacts are more localised

[16] PastMap [Online] available from: https://www.pastmap.org.uk/
[17] Historic Environment Scotland. [Online] available from: www.historicenvironment.scot
[18] National Library of Scotland [Online] available from: https://maps.nls.uk/

Assessment Methods

7.3.14 The assessment examines likely significant effects resulting from the Project on heritage assets. These can be both negative and beneficial, and can result from:

- Physical impacts resulting from the Construction Phase; and
- Impacts to the setting of assets resulting from the Operational Phase.

7.3.15 The assessment takes into account the value (significance) of the asset and its setting and the magnitude of change predicted, either physically or through changes to its setting.

Criteria for Assessing Sensitivity

7.3.16 The value (significance) of a heritage asset is determined by professional judgement, guided but not limited to any designated status the asset may hold. The value of an asset is also judged upon a number of different factors including the special characteristics the assets might hold which can include its artistic, archaeological, architectural, historic, traditional, aesthetic, scientific and/or social interests. This value of a heritage asset is assessed primarily in accordance with the guidance set out in NPF4 and the Historic Environment Policy for Scotland (HEPS)[19] as well as HES document Designation Policy and Selection Guidance[20]. The value (significance) is defined by the sum of its heritage interests based on the characteristics listed above. Taking these criteria into account, each heritage asset within the study area has been assigned a level of value (significance) in accordance with the five-point scale (ranging from 'very high' to 'negligible') set out in Table 7.2.

Table 7-2: Heritage Value (Sensitivity) Criteria

Value	Examples
Very High	• World Heritage Sites (WHS); • Assets of acknowledged international importance; and • Historic landscapes of international sensitivity, whether designated or not.
High	• Scheduled Monuments; • Non-designated sites/features of schedulable quality and national importance; • Category A Listed Buildings; • Gardens and landscape on the Inventory of Designed Landscapes of outstanding archaeological, architectural or historic interest; and • Registered Battlefields.
Medium	• Sites/features that contribute to regional research objectives; • Category B and C Listed Buildings;

[19] Historic Environment Scotland (2019) *Historic Environment Policy for Scotland,* Edinburgh: Historic Environment Scotland.
[20] Historic Environment Scotland (2019) *Designation Policy and Selection Guidance,* Edinburgh: Historic Environment Scotland.

Value	Examples
	• Locally listed or non-designated buildings that can be shown to have special interest in their fabric or historical association; • Conservation areas; • Historic townscapes or built-up areas with historic integrity in their buildings, or built settings; and • Non-designated historic landscapes of regional sensitivity.
Low	• Non-designated sites/features of local importance; • Non-designated buildings of modest quality in their fabric or historical association; and • Historic landscapes whose sensitivity is limited by poor preservation and/or poor survival of contextual associations or with specific and substantial importance to local interest groups.
Negligible	• Assets with very little or no surviving archaeological interest; • Buildings of no architectural or historical note; buildings of an intrusive character; and • Landscapes with little or no significant historical interest.

7.3.17 Having identified the value of the heritage asset, the next stage in the appraisal identifies the level and degree of impact to an asset arising from the Project. Impacts may arise during construction or operation and can be temporary or permanent. Impacts can occur to the physical fabric of the asset or affect its setting.

7.3.18 When professional judgement is considered, some sites may not fit into the specified category in this table. Each heritage asset was assessed on an individual basis and take account of regional variations and their individual qualities.

Criteria for Assessing Magnitude of Change

7.3.19 The level and degree of impact (magnitude of change) was assigned with reference to a five-point scale as set out in Table 7.3 (ranging from 'high' to 'no change'). In respect of cultural heritage, an assessment of the level and magnitude of impact is made in consideration of any scheme design mitigation (embedded mitigation). Where no change to the value of the asset is caused, this was be stated and the asset will not be assessed further.

Table 7-3: Magnitude of Change Criteria

Magnitude of change	Examples
High	Adverse – Total removal or alteration of an asset, such that the physical resource and /or the key components of its setting are

	totally altered resulting in complete change to an asset's setting and loss of heritage value of the asset. Beneficial – Preservation of the asset in situ where it would be completely or almost completely lost in a do-nothing scenario.
Medium	Adverse – Partial alteration of an asset, such that the heritage value of the resource and/or the key components of its setting are clearly modified. Beneficial – Changes to key elements of the assets fabric or setting that result in its cultural significance being preserved, where they would otherwise be lost, or restored.
Low	Adverse – Minor alteration of an asset, such that the components of its setting are noticeably different, but the physical characteristics are not affected and the impact does not result in a noticeable loss of heritage value. Beneficial – Changes that result in elements of the assets fabric or setting that detract from its cultural significance being removed.
Negligible	Slight changes to historic elements that hardly affect the setting of an asset and do not result in any loss of value.
No Change	No change

7.3.20 An assessment of the level of the significance of effect, having taken into consideration any embedded mitigation, has be determined by cross-referencing between the significance (heritage value) of the asset (Table 7.2) and the magnitude of impact (Table 7.3). The resultant level of the significance of effect (Table 7.4) can be negligible, minor, moderate or major and neutral, adverse or beneficial. Effects of major or moderate significance are considered to be significant.

Table 7-4: Assessment of the Significance of Effect

	Very High	High	Medium	Low	Negligible
High	**Major**	**Major**	**Moderate**	**Moderate**	Minor
Medium	**Major**	**Moderate**	**Moderate**	Minor	Negligible
Low	**Moderate**	**Moderate**	Minor	Negligible	Negligible
Negligible	Minor	Minor	Negligible	Negligible	Negligible

7.3.21 Effects of major or moderate significance are considered to be significant.

7.3.22 An assessment of the predicted significance of effect has been made both prior to and following the implementation of mitigation measures to identify the residual effects. This first highlights where mitigation may be appropriate, and then demonstrates the

effectiveness of that mitigation, providing a framework for the assessment of the significance of effect which takes mitigation measures into consideration.

7.3.23 All archaeological work will be undertaken in line with guidance published by the Chartered Institute for Archaeologists[21].

7.4 Assessment of Effects, Mitigation and Residual Effects of the New-build Overhead Line (WB Route)

Introduction

7.4.2 This section examines the likely significant effects on sites of archaeological and cultural heritage interest resulting from the New Build Overhead Line and associated works including access tracks and compounds (the 'WB Route') element of the Project. Baseline data was collected for the Site as well as a 500m Study Area in order to assess the archaeological potential of the Site, as well as examine the potential for impacts, both physical and through changes to setting.

Baseline and Future Baseline Conditions

Geology, Topography, and Land Use

7.4.3 The WB Route runs roughly southwest to northeast from the former opencast mine of Pinwinnie near New Monkland (NGR NS 75930 68896) in the south, to Bonnybridge Substation in the north (NGR NS 83878 80885) covering a distance of approximately 19km (Figure 7.1). The WB Route starts at the northern end on the western side of Bonnybridge Substation within Falkirk. It is routed to the south of the substation crossing two existing 132kV overhead line routes, referred to as the CB Route and AA Route respectively. The WB Route then heads southeast towards the corridor of the Forth and Clyde Canal. The landscape predominantly comprises of arable fields interspersed with areas of woodland. It then heads south-west largely following the existing CB Route to the north-west of the Slamannan Plateau Special Protection Area (SPA), where the terrain becomes rougher along with more expansive woodland. The WB Route crosses into the county of North Lanarkshire to the north of Fannyside Muir continuing towards Palacerigg Country Park, and the terrain in this area comprises expansive moorland.

7.4.4 The WB Route includes an approximate 750m spur which will connect it to the existing Cumbernauld Substation and allows the existing CB Route between Bonnybridge and Cumbernauld to be removed in its entirety. From Cumbernauld Substation the WB Route is routed through part of Palacerigg Country Park heading south towards Greengairs. The landscape here comprises relatively rough pastoral fields interspersed with woodland and boggy terrain.

7.4.5 The bedrock geology along the WB Route largely consists of sedimentary rock cycles, with the majority being a combination of Scottish Lower Coal Measures Formations and Clackmannan group type, formed between 319 and 318 million years ago and 328 and 318 millions years ago respectively, during the Carboniferous period[22]. The area of the WB Route surrounding Cumbernauld Substation comprises a bedrock formation of Upper

[21] Chartered Institute for Archaeologists (2020) *Standard and Guidance for Historic Environment Desk-Based Assessment,* Reading: CiFA.
[22] BGS Viewer available at BGS Geology Viewer (BETA), accessed 20th November 2025.

Limestone Formation formed between 329 and 324 million years ago during the Carboniferous period.

7.4.6 Superficial deposits of Devensian Till, formed between 116 and 11.8 thousand years ago during the Quaternary period, covers the majority of the area of the WB Route, although distinctive changes are noted in a number of areas. These include the lower lying land of the Forth-Clyde Valley, at the northern end of the WB Route, where superficial deposits of Devensian Raised Marine Deposits, which comprise clay, silt and gravel that formed between 116 and 11.8 thousand years ago during the Quaternary period, have been recorded around Falkirk while alluvium superficial deposits, comprising of clay, silt, sand and gravel are noted around the River Carron. These deposits were formed between 11.8 thousand years ago and the present during the Quaternary period. A large banding of Peat, formed between 2.588 million years ago and the present during the Quaternary period, has also been recorded near the higher ground in the centre of the WB Route in the area of Fannyside Muir and Garbethill Muir.

7.4.7 The majority of the Study Area is located between 30 m and 167 m Above Ordnance Datum (aOD) and current land use includes areas of pasture and arable with blocks of commercial woodland throughout the northern and southern sections. The central area includes areas of semi-improved moorland as well as bogland/moss.

Designated Assets

7.4.8 There are six designated assets within the Study Area of the WB Route. Most of these are scheduled components of the Antonine Wall which forms part of the Frontiers of the Roman Empire WHS and associated WHS buffer (WHB1 and WH1). These scheduled monuments consist of Antonine Wall, Rough Castle fort, annexe and Military Way (SM90013), and the Antonine Wall, Rough Castle to Lime Road, and field system (SM8244). The remaining designated assets are Scheduled Monuments comprising the prehistoric Wester Carmuirs, ring ditch settlement 450m SSW of (SM6413), and the Forth and Clyde Canal: Castlecary - M9 Motorway (SM6768) which dates to the post-medieval period.

Prehistoric – Palaeolithic to Bronze Age (40,000BC to 800BC)[23]

7.4.9 There is limited evidence for prehistoric activity within the Study Area, with a total of 11 assets dated to the prehistoric period recorded. These consist of three designated and eight non-designated assets.

7.4.10 Within the WB Route there are two scheduled monuments which are a ring ditch settlement (SM6413) and palisaded enclosure settlement, dated to the late prehistoric period (SM6414). In the field to the west of the palisaded enclosure (SM6414) is a series of pits and a ditch also dating to the prehistoric period (340450), whilst in the same field as scheduled monument (SM6413), to the east, is a series of pits also dating to the prehistoric period (47024).

[23] Due to the varied nature of the Scottish landscape, and the resulting variations in settlement/land use, there is no agreed chronology at a national level. As such, the dates that have been assigned to the various periods for the baseline study are those set out in the Scottish Archaeological Research Framework (ScARF) available at Panel Reports Chronology and Downloads | The Scottish Archaeological Research Framework.

7.4.11 Evidence of settlement in the Study Area includes a prehistoric ring ditch that is recorded at Wester Carmuirs (SM6415), 267 m from the Site and the cropmarks of a field system (47024) located at Wester Carmuirs, situated approximately 40 m from the Site. Cropmarks and pits, located at Bogton (46989) are also located approximately 435 m from the Site.

7.4.12 There is a single findspot relating to the prehistoric period consisting of a Late Bronze Age gold bracelet found approximately 13 m from the WB Route (46804).

Iron Age and Roman (800BC to AD400)

7.4.13 The Iron Age (750 BC–AD 400) is often considered to be a well understood period of Scottish prehistory. Monuments include stone-built brochs and duns, in the north and west, while there are a large number of hilltop enclosures and forts in the south and east.[24]

7.4.14 No Iron Age assets are recorded within the Site or Study Area.

7.4.15 Roman activity within the Study Area is focused on the northern end of the WB Route. When the Roman army first marched into west central Scotland it appears to have been into a largely deforested landscape of quite intensive cultivation[25]. Within Scotland there is evidence of contact between the Romans and natives in the form of the exchange of Roman goods, notably Samian ware.[26]

7.4.16 Remains dating to the early Roman period within the Study Area are limited, with the majority of evidence dating to the mid-second century when the Forth-Clyde frontier was constructed. The Antonine Wall, which forms part of the Frontiers of the Roman Empire WHS (WH1), lies at the northern end of the WB Route and comprises of a number of scheduled monuments, including Rough Castle Fort and the adjacent sections of Wall and associated remains (SM8244 and SM90013). Rough Castle represents the best preserved of all the Antonine Wall forts comprising a wall, ditch and outer mound, located 100 m from the Site. Other fortifications include West Carmuirs (46925), a temporary Roman camp located 315 m from the Site; Tent field Roman Fortlet (46762/46781), situated approximately 265 m from the Site, and temporary camp northwest of Wester Carmuirs (251653), located approximately 145 m from the Site. Within the WB Route itself is Bonnybridge East Fortlet (376640).

7.4.17 There are also several signal platforms (46801), located within the WB Route; (127414), situated approximately 270 m from the WB Route, (127415), located approximately 25 m from the WB Route, and (122823), sited 7 m from the WB Route - all located along the Antonine Wall. These were essential for communication between fortifications to assist the Roman army in responding to threats.

7.4.18 Located at Crow Bank Farm (46805), approximately 200 m from the Site, a short length of stone kerbing, reminiscent of Roman work was identified, although no datable evidence

[24] Derek Alexander (2015), The Iron Age, available online: https://scarf.scot/wp-content/uploads/sites/15/2022/04/05_IronAge.pdf
[25] Derek Alexander (2015), The Iron Age, available online: https://scarf.scot/wp-content/uploads/sites/15/2022/04/05_IronAge.pdf Page 12
[26] Derek Alexander (2015), The Iron Age, available online: https://scarf.scot/wp-content/uploads/sites/15/2022/04/05_IronAge.pdf Page 12

has been recovered from the feature it is suggested to be part of a Roman signalling station.

7.4.19 Linking the Antonine Wall with other areas are Roman roads such as Belstane to Castlecary (241939) which purportedly is 265 m from the Site.

7.4.20 There were five findspots recorded within the Study Area. These include (47020) a Roman bronze trumpet brooch, approximately 390 m from the Site; a badly damaged Roman alter (46937), found approximately 385 m from the Site; a Roman coin (47021) found 190 m from the Site and a mount and sestertius (268729) found 10 m from the Site. A Roman coin (369727) has also been found 10 m from the WB Route.

Medieval (AD400 to AD1500)

7.4.21 A total of three assets dating to the medieval period were recorded within the Study Area, none of which fall within the Site. All of these are non-designated assets, with most linked to agricultural land use.

7.4.22 Located in Bonnybridge, approximately 390 m from the Site, Cowden Hill (47020) is an example of medieval agricultural landscaping and is a series of stone-faced cultivation terraces with numerous ruins of buildings and walls.

7.4.23 Other non-designated assets indicate that the landscape was predominantly used for arable cultivation, with ridge and furrow located in areas such as Lochgreen (286486), situated approximately 20 m from the Site. However, it should be noted that ridge and furrow cultivation continued in use into the post-medieval period, making the dating of these difficult.

7.4.24 A single findspot was also recovered within the Study Area dating to the Medieval period, this being an axe head and pottery (45757), located approximately 375 m from the Site.

Post-Medieval (AD1500 to AD1900)

7.4.25 A total of 83 assets dating to the post-medieval period were identified within the Study Area, consisting of two scheduled monuments, 24 listed buildings, 56 non-designated assets and a single Battlefield (BTL9). Of these assets six fall within the WB Route alignment.

7.4.26 The previously recorded assets include features associated with agricultural land use such as farmsteads, orchards and moorland as well as assets representing the rise of industrial activities such as collieries, lime kilns, clay mines and industrial works.

7.4.27 Early County Surveys of the Study Area provide limited information regarding land use due to their scale. However, they show a rough settlement pattern that largely reflects that of the contemporary landscape with a focus on the lower lying areas along the River Carron valley to the north, as well as the River Kelvin to the west.

7.4.28 The first detailed survey of the WB Route is the General Roy Survey, dating to the mid-18th century[27]. This shows the land use and settlement pattern largely corresponding to that which survives in the contemporary landscape, with nucleated farmsteads within a mixed agricultural landscape. Large sections of the southern section of the WB Route are shown

[27] General Roy Survey available at Georeferenced Maps viewer - Map images - National Library of Scotland, accessed 22nd November 2025.

as arable land, or pockets of arable land. This land use is shown to change in the central area, where *Fannyside Loch* is depicted, as moorland or moss, while the landscape between *Fannyside Loch* and the ridge overlooking the Carron Valley, in the north, is far more mixed with areas of pasture/semi-improved land noted.

7.4.29 The settlement pattern on the Roy Survey can also be largely traced in the contemporary landscape, albeit some settlements have grown and expanded. Most settlement names are relatively unchanged between the Roy Survey and the modern landscape, with the main towns of Falkirk recorded in the north, and *Ardry* (Airdrie) recorded in the south.

7.4.30 The first accurate survey to show the complete Study Area in detail is the Ordnance Survey mapping of the mid-19th century. While large areas of the WB Route in the central areas remains agricultural or moorland/moss, the expansion of settlements and growth of industrial activities is evident in the northern and southern areas of the WB Route.

7.4.31 The southern end of the new WB Route, around the A73 Stirling Road and the village of Cumbernauld, was first depicted on historical mapping dating to the 1860's (OS) (1860, area of Falkirk, Sheet XXXV, scale six inches to one statute mile, published by Ordnance Survey office, Southampton, 1865) and showed areas of agricultural fields with some evidence of industry in the wider area, including a coal pit and coke kiln, and a coal pit and associated tramway in the Study Area in Nappy Faulds. Moreover, the area surrounding the River Avon is depicted as marsh land labelled as liable to flooding. There is also a depiction of two field boundaries, and the ploughed-down courses of two railway lines (46936) recorded approximately 455 m from the Site.

7.4.32 At the centre of the new WB Route, the earliest historical mapping was surveyed in 1859 (OS) (1859, Dumbartonshire, Sheet XXVI.5, published 1860), and the site and surrounding Study Area appears to be largely agricultural land with large areas of moss, although some evidence of improvement is noted with an orchard recorded (AECOM046), as well as a number of farmsteads (AECOM048 and AECOM047).

7.4.33 At the northern end of the new WB Route, around Bonnybridge, the earliest historical mapping was surveyed between 1843 to 1882 (OS) (1860, area of Dunipace, Sheet XXX, scale six inches to one statute mile, published by Ordnance Survey office, Southampton, 1864) and showed the Study Area as a mixture of arable land and forested areas, such as Tent Field Plantation and Drum Wood. Cutting through the landscape is the Scottish Central and Edinburgh and Glasgow Railway. Bonny Water, at the edge of the mapping, leads to the undeveloped village of Bonnybridge, which contained evidence of industry including a Tile Works (AECOM011), Dye Works (AECOM012), Flour and Corn Mill (AECOM013), Paper Works (AECOM015) and Flour Mill (AECOM014). Also depicted on the 1864 OS map are several farmsteads, suggestive of agricultural activity within the Study Area. These include a single storey building, likely a farmstead (179765) located 370 m from the Site; a Farmstead ruins Greengairs (179767), Cameron (179770) and two farmstead buildings at Cullochrig (179793).

7.4.34 By the second edition of 1899 (OS) (1896, Second Edition of 1899, Sheet XXX.N.W, scale six inches to one statute mile, published by Ordnance Survey office, Southampton, 1899) the northern end of the new WB Route became more developed with Bonnybridge expanding to include additional terrace housing and increased industrial activity in the

form of Iron Foundry Works (47034), Gas Works (47032), Brick Works (143828), Old quarry (AECOM049) and Paper Works (AECOM015). The rest of the Study Area remained largely the same as previous mapping, with the exception of the Caledonian Railway, which had additional lines which lead to the western industrial fringes of Falkirk where sites such as the Lime Wharf Chemical Works (46990) and Camelon Chemical Works (later tile works) (149395) had been established.

7.4.35 At the southern end of the Site, near the village of Cumbernauld, the second edition of historical mapping dating to 1899 (OS) (1897, Second Edition 1899, Sheet III.N.W, scale six inches to one statute mile, published by Ordnance Survey office, Southampton, 1899) the area remained the same as on previous mapping as agricultural fields.

7.4.36 There are several listed buildings within the Study Area, such as Bonnyside House a Category C listed building (LB49998/ 371460), dating to the 19th century, and located approximately 35 m from the Site. Its historical importance derives from being a little altered example of a modest mid- 19th century house. It is notable that a section of the Antonine Wall (Scheduled Ancient Monument) runs through the grounds of Bonnyside House to the south.

7.4.37 Lochgreen Farmhouse is a Category B listed building (LB13326/ 232162) located approximately 285 m from the Site. Built in 1794, this farmhouse shows the agricultural activity during this period in the Study Area. This is further evidence by Rochsoles stable block, a Category B listed building (LB14205/ 202633), dating to 1839, situated approximately 470 m from the Site.

7.4.38 There are also several non-designated historic environment assets dating to the 19th century relating to transportation such as Lochlands railway junction (71777), situated approximately 455 m from the Site and Lime Road Goods Station (150982), located 410 m from the Site.

7.4.39 Another integral part of the Study Area landscape is the scheduled Forth and Clyde Canal, parts of which are within the Site, such as a point immediately west of the Red Burn Aqueduct (on the west) to immediately west of the M9 Motorway (on the east), which is a Scheduled Monument (SM6768). As well as an aqueduct (171385) and sluice (171288) recorded on the National Record of the Historic Environment (NRHE). The importance of this asset derives from it being Scotland's first inland waterway, constructed between 1768 and 1790 and being an example of Georgian civil engineering.

7.4.40 The evidence for industrial activity within the Study Area dating to this period is mostly in relation to mining. This can be seen by a colliery, open cast mine and fire clay mine (68414) located 35 m from the Site; a Fireclay works and mine (141912) located at Rough Castle, approximately 346 m from the site; an engine house and weighing machine (362628) located on the northern extent of the Thrushbush Incline, approximately 200 m from the Site; a crane (46991) located 337 m from the Site and an industrial works located 142 m from the Site (46990). Finally, within the Site itself there is a record of a coal mine (362629).

7.4.41 There is evidence of agricultural activity within the wider Study Area, although not appearing on 1st edition OS map of 1864. These include the 19th century settlement of Linnyate (185658) approximately 120 m from the Site; Boglea and Cameron Farms

(142724) located 295 m from the Site; Glencryan Burn (162720) situated approximately 200m from the WB Route; Wester Lochdrum (162755) sited approximately 85 m from the WB Route; South Drum (162756), situated approximately 171 m from the WB Route and Howierig Farm (143540) located 8 m from the WB Route.

7.4.42 Heritage assets related to ecclesiastical activity recorded on the NRHE within the Study Area dating to the 19th century include a tomb (302174) comprising a square plan un-roofed burial enclosure; a small walled family graveyard situated by Lochgreen Farm (46795) dating to 1751, located 340 m from the Site; and St Joseph's Roman Catholic Church (143858) located 460 m from the Site.

7.4.43 Other records dating to the post-medieval period include several egg end boilers (46992), 199 m from the Site and the Airdrie Golf Course (307825), approximately 190 m from the Site; both dating to the 19th century.

Modern (AD1900 to Present)

7.4.44 By the historical mapping of 1911 (OS) (1911, Edition of 1914, Sheet III.N.W, scale six inches to one statute mile, published by the Director General at the Ordnance Survey Office, 1914), the southern end of the WB Route showed the agricultural land use continued into the 18th century. At the northern end of the route, near the village of Bonnybridge, the OS map of 1913 (1913, Edition of 1918, Sheet XXIX.4. scale six inches to one statute mile, published by the Director General at the Ordnance Survey Office, 1918) shows that the village of Bonnybridge has not developed since the previous mapping. Within the wider Study Area to the south of Bonnybridge Substation shown in historical mapping (OS) (1913, Edition of 1921, Sheet XXX.N.W, scale six inches to one statute mile, published by the Director General at the Ordnance Survey Office, 1921) the 19th / early 20th century saw the development of the village of Camelon with terrace housing appearing, likely due to the construction of an industrial Iron works (314142) requiring a nearby workforce.

7.4.45 By the historical mapping surveyed between 1958 to 1974 (OS) (1958-1974, Ordnance Survey, Sheet NS 88 SW, published by the Director General at the Ordnance Survey Office, Southampton, 1974), the northern end of the Site appears the same as the present day, with the village of Bonnybridge fully developed and Bonnybridge Substation, along with the associated power lines, are extant. The southernmost end of the Site saw a change from small villages to the development of larger roads, such as the B8054 and the B039, to accommodate the growing village of Cumbernauld in the historical mapping survey between 1930 to 1973 (OS) (1930-1973, Ordnance Survey, Sheet NS 77 SE, scale six inches to one statute mile, published by the Director General at the Ordnance Survey Office, 1973). The wider Study Area of the northern most end of the WB Route stayed largely as agricultural fields with the appearance of overhead lines along the Study Area (including the 'CB Route' which will be partially decommissioned as part of the Project).

7.4.46 Historical mapping of 1982 (1960-1981, *Ordnance Survey,* scale 1:10, published 1982) depicts the Study Area and WB Route as largely the same. However, there is a depiction of a structure (268818) and row of cottages (268817) at Castlecary High Wood. There is also a depiction of what may be two enclosures on Garbethill Muir (268823) and a mine at Tippet Crags (268825).

7.4.47 There is evidence for further industrialisation during this period, such as the former Bonnybridge Power Station (105789), as well as Chattan Stove and Iron Works (312432) approximately 15 m from the Site.

7.4.48 Other assets in the wider study area relating to modern industrial activity with potential earlier origins include a Brickworks (141884) located 440 m from the Site; Brickworks and refractory works (68416) located 450 m from the Site; Lime kiln (79069) situated approximately 255 m from the Site; a clay mine (143841) located 450 m from the Site; a colliery (132061) located 260 m from the Site; a quarry (142722) located 305 m from the Site and a fired brick works (46794) located 240 m from the Site.

7.4.49 There were several upgrade projects to Scotland's waterways conducted in the modern period. Built in the 21st century is a canal lift, which is located 75 m from the Site and connected to the Forth and Clyde Canal (218994), as well as the Millennium Link project which upgraded the union canal, including several canal basins and tunnels (279406, 279407 and 279405). Other historical assets related to the Millennium Wheel, which was the centrepiece of the Millennium Link project, including an upper basin (279408), aqueduct (279409), lower basin and slipway (279415), visitor centre (279416), lower lock (279417) and footbridge (279418).

7.4.50 Located in the village of Bonnybridge, there were commercial properties recorded on the NRHE, such as the Bank of Scotland (143703) built in 1922 and demolished in 1925, located approximately 480 m from the Site.

7.4.51 To the east of the village of Cumbernauld, near Palacerigg Golf Course, is the Category B listed Palacerigg Visitor Centre (LB52610/ 374555). Situated approximately 475 m from the Site, its historical importance derives from a mural painted in 1974 by Alasdair Gray in the entrance foyer – the artwork, titled 'Scottish Wildlife Mural'. Other assets dating to the modern period in Cumbernauld include residential housing and housing estates (348769, 348772) and flats (348771), all of which date to the 20th century.

7.4.52 Educational facilities such as Cumbernauld High School (207220) are also recorded on the NRHE, which was constructed in the 20th century.

7.4.53 There are also records of assets relating to the Second World War, such as a searchlight battery (360166) and a hospital (340976).

7.4.54 Commemorative monuments such as the War Memorial (340586, 215 m from the Site), Stanrigg memorial park (374750 440 m from the Site) and the Battle of Bonnymuir Memorial (369820, 395 m from the Site), are important as they demonstrate a communities need to preserve a collective memory or link to a town's past.

Undated

7.4.55 Within the wider landscape is a pond (124445) approximately 230 m from the Site of unknown date, although it is assumed to be of post-medieval or modern date as it may be a curling pond.

7.4.56 Findspots of an unknown date were also recovered within the Study Area such as a small clay pot, light yellow in colour (45923), found 415 m from the Site. As well as a large, rough stone mortar, which was found on Bonnyhill Farm (351533), approximately 30 m from the Site.

Previous Archaeological Investigations

7.4.57 A watching brief was conducted in March 1996, within the Proposed WB Route. This identified an area of pavement; however, the date of this is unknown (110293). A watching brief was conducted in September 2006, in the area of the Rough Castle to Lime Road portion of the Antonine Wall (290647), approximately 70 m from the Site – no archaeological deposits or features were recorded.

7.4.58 A series of SI works were undertaken 170 m from the Site at East Airdrie Link Road (376663). In total 127 trial pits and 21 Mine Investigation Pits were monitored and found remains of a structure that may relate to 19th- / 20th- century mining activity.

7.4.59 An archaeological investigation was conducted along the Antonine Wall approximately 420 m (373501) from the Site. Although traces of the Antonine Wall ditch are visible in the neighbouring wood, no significant archaeological features or deposits were noted during excavation.

LiDAR and Aerial Photography Review

7.4.60 A review of LiDAR data and aerial photographs was also undertaken alongside the review of historic mapping as part of the baseline assessment. This noted that relatively large areas of the northern and southern ends of the Study Area had been subject to disturbance as a result of 19th and 20th century industrial activities and mining.

7.4.61 The review identified a number of new assets, most of which are associated with the post-medieval and modern development of settlement and industrial activities in the Study Area. These are discussed in the baseline text above and are also listed in Appendix 7.1.

Site Visit

7.4.62 A site visit was undertaken between the 3rd to the 7th of November 2025. The purpose of this visit was to view the landscape of the WB Route to examine its character, as well as identify areas such as previous ground disturbance and identify previously unrecorded assets. Weather conditions varied from overcast with low cloud and heavy rain showers, however, in general the conditions allowed good views of the landscape.

7.4.63 The site visit also examined the associated works including compounds, laydown areas, and proposed access track works, which will include a combination of minor upgrades to existing tracks as well as a temporary stone track where existing tracks do not exist. It was, however, noted that in many cases the trackway is in agricultural land (both pasture and arable), and in most areas existing roads/tracks are already present which would result in minimal intrusive works.

7.4.64 No new assets were recorded as part of the walkover survey, and all of the proposed bell mouths were near existing field entrances or hedges/fences, so there will be no impacts to stone walls.

Archaeological Potential

7.4.65 There is evidence for human activity recorded within the Study Area dating from the prehistoric period onwards, although there are limited remains from a number of periods.

7.4.66 Based on studies in other similar landscapes in the Central Belt, it is assumed that the Study Area would have represented a landscape suitable for exploitation from at least the

Mesolithic period when the icesheets started to retreat. Aerial photography has also identified possible later prehistoric sites in the lower lying land at the northern end of the Study Area. As such, there is low potential for previously recorded prehistoric sites in the upland areas, and medium potential in the lower lying land at the north.

7.4.67 The northern end of the WB Route crosses the Antonine Wall WHS and WHS buffer. Aerial photography has also identified possible crop mark sites dating to the Roman period, and there is the potential for further remains to survive. There is considered to be high potential to identify Roman remains in the north, around the corridor of the Antonine Wall, and low potential for the remaining areas.

7.4.68 There is limited evidence for medieval settlement within the Study Area, and it is assumed that the landscape through which the WB Route passes would have been largely agricultural. As such, the archaeological potential for the discovery of new assets dating to this period is considered to be low throughout the Study Area.

7.4.69 There is good evidence for post-medieval activity, with detailed mapping from at least the middle of the 19th century, which provides detail of the development and change in land use and settlement patterns. As such, the potential for new assets dating to the post-medieval and modern periods is considered to be low across the WB Route. The Site walkover did not identify any additional features of potential heritage interest within the Site.

Future Baseline

7.4.70 Based on current knowledge, the future baseline is unlikely to change in the absence of the Project. Changes may occur as a result of other developments which could result in physical impacts, as well as impacts resulting from changes to the setting of assets.

7.4.71 Land use within the Study Area is likely to remain the same, and as such there is the potential for some degradation of buried archaeological remains in areas of arable cultivation.

7.4.72 Climate change could result in impacts to cultural heritage through aspects such as erosion resulting from extreme weather events. However, the extent to which this could occur is unknown.

Embedded Mitigation Measures

7.4.73 Where possible, the Project, including all access tracks, has been designed to avoid previously recorded heritage assets, thereby avoiding the potential for physical impacts.

7.4.74 There are six scheduled monuments within the Project:

- SM6413 – Wester Carmuirs, ring ditch settlement 450m SSW of.
- SM6414 – Enclosed settlement and palisaded enclosure, 140m E of Wester Carmuirs Farm.
- SM90013 – Antonine Wall, Rough Castle fort, annexe and Military Way.
- SM6768 – Forth and Clyde Canal: Castlecary - M9 Motorway.
- SM8207 – Antonine Wall, 495m WSW and 125m SE of Bonnyside House.
- SM8244 – Antonine Wall, Rough Castle to Lime Road, and field system.

7.4.75 Although these scheduled monuments fall within or close to areas marked for works associated with the Project, no works will take place within the scheduled monuments, which will be marked as exclusion zones during construction (as detailed in the mitigation section).

Assessment of Effects

Construction Phase

7.4.76 The construction phase is likely to result in the following impacts:

- Permanent physical impacts on previously recorded heritage assets due to the construction of the towers and temporary work compounds at each tower location, measuring 50 m x 50 m, as well as supporting works, including access tracks and bell mouths.
- Permanent physical impacts on previously unrecorded heritage assets due to the towers and temporary work compounds at each tower location, measuring approximately 50 m x 50 m, as well as supporting works, including access tracks and bell mouths.

7.4.77 The results of the desk-based assessment demonstrate that the landscape through which the WB Route passes has been exploited and occupied from the prehistoric period onwards and a number of heritage assets have been recorded within the WB Route.

7.4.78 A total of six designated assets and 13 non-designated historic environment assets have been recorded within the Site. A number of these assets are located away from any proposed works, such as new tower works and associated compounds and access track works. As such, based on the proposed design, there are anticipated to be no impacts on the assets detailed in Table 7-5 below, and these assets have not been taken forward to full assessment.

Table 7-5: Assets within the WB Route Site where impacts have been scoped out.

Asset ID	Asset Name	Reason Scoped Out
SM6768	Forth and Clyde Canal: Castlecary - M9 Motorway	The asset is located approximately 50 m south of the nearest tower (Tower WB053), with scaffolding proposed to the north and south to allow for the watercourse crossing. This scaffolding will also be outside of the scheduled area. Therefore, no physical impacts will occur.
SM6413	Wester Carmuirs, ring ditch settlement 450m SSW of	The asset is located 40 m south of nearest towers (Towers WB054 and WB055). It is also located to the south of a hedgerow separating the field in which the scheduled area is located from the field in which the nearest access track is proposed. Therefore, no physical impact will occur to the asset.

SM6414	Enclosed settlement and palisaded enclosure, 140m E of Wester Carmuirs Farm	The asset is located 500 m north of the nearest towers (Towers WB053 and WB054) and although it is within the access road buffer, the bellmouth (the nearest element of works) is located on the south side of the A803, while the scheduled area is located on the north side of the A803. Therefore, no physical impact will occur to the assets.
110293	Rough Castle Structure (Roman)	The asset (a possible Roman ford) no longer survives as it was identified during a watching brief prior to opencast mining taking place.
376055	Falkirk, Rough Castle.	While the NRHE notes this as an asset, the record relates to an archaeological watching brief which did not identify any archaeological remains or deposits. As such, no impacts are likely.

7.4.79 The remaining assets recorded within the Site are in close proximity to the proposed works which may involve ground disturbance, such as stripping of topsoil for the construction of the new towers and their associated compounds, as well as new temporary access tracks (Table 7-6). As a result, these assets have been taken forward to assessment.

Table 7-6: Assets taken forward to full assessment

Asset ID	Asset Name	Period	X	Y
WH1; SM8244	Antonine Wall WHS Boundary: Antonine Wall, Rough Castle to Lime Road, and field system	Roman	275462	676737
WHB1	Antonine Wall WHS buffer	Roman	270566	680507
179770	Cameron farmstead	Post-Medieval	276750	670640
268818	Castlecary High Wood Structure	Unknown	281350	676370
358682	Cameron Road lime kiln and well	Post-Medieval	276699	670663
AECOM049	Old quarry. Recorded on the Second Edition Ordnance Survey mapping (Stirlingshire	19th Century	281312	676279

XXIX.12, surveyed 1896, published 1898.)

Antonine Wall WHS buffer (WH1, WHB1, SM8244)

7.4.80 A detailed assessment of the likely effects on the Antonine Wall WHS has been undertaken in a specific Heritage Impact Assessment (HIA) in line with UNESCO Guidance (see Appendix 7.4, Section 5). This assessed likely effects resulting from physical impacts from temporary works such as construction compounds and access tracks, as well as the construction of the new towers.

7.4.81 The assessment found that physical impacts on scheduled components of the WHS will be avoided, with the works restricted to the WHS buffer.

7.4.82 This concluded that in areas where there had been previous disturbance (removing all archaeological remains), or where no previous archaeological remains had been recorded, there will be **no impacts** on Attributes that convey the OUV of the WHS or its Integrity and Authenticity. This is defined as **NEUTRAL** in HIA terms.

7.4.83 While there will be limited to works within SM8244, a scheduled component of the WHS, these will be limited to widening of an existing access track running through the SM (this existing track does not form part of the scheduled area), as well as vegetation clearance under the new Overhead Line for LoD. As such, this will not result in impacts.

7.4.84 The assessment also examined the likely effects from impacts on previously unrecorded assets that may be found to survive during works and that also contribute to the OUV of the asset. This concluded that there is the potential for previously unrecorded remains associated with the Antonine Wall to survive, and these would have the potential to be of local, regional, or national significance. Furthermore, any physical impacts could result in impacts to remains that contribute to Attributes of the OUV of the WHS, as well as its Integrity and Authenticity. It would, however, be unlikely that the Project would result in the total loss of these remains. As such, the level of impacts on any previously recorded assets that might survive, and contribute to Attributes of the OUV of the WHS, is determined to be '**Minor Negative Impact'** in HIA terms which is defined as '*Research into the potential impact shows that change would be negligible*'.

7.4.85 It is considered that a Minor Negative Impact in HIA term is deemed to 'not significant' in EIA term.

Cameron Farmstead (179770)

7.4.86 The site of a former farmstead, named as Yett, is recorded as a ruin adjacent to a track/minor road, within a small field/enclosure to its south, on the 1st Edition Ordnance Survey mapping of the area. By the time of the 2nd Edition Ordnance Survey mapping the farmstead is no longer depicted, although the track and the field/enclosure are shown, and both the track and the field/enclosure survive in the modern landscape. No above ground remains survive, although possible traces are visible on LiDAR data, with the former farmstead fronting onto the road to a farm track to its north. Any remains that might survive as buried features may have archaeological and historical interest from the information they could hold about the development of the post-medieval landscape, and

specifically agriculture and settlement. The asset is considered to be of low value (sensitivity).

7.4.87 The former farmstead is located adjacent to a trackway that may require upgrading to provide access to Towers WB008 and WB009. As such, there is the potential for some limited impacts on any remains that do survive below ground, although these works are expected to be limited due to the nature/condition of the existing track which is expected to require minimal alterations. The Project is unlikely to remove all remains, and, as a result, the magnitude of change is considered to be low. On an asset of low value, this would result in a **negligible significance** of effect. This is not significant in EIA terms.

Cameron Road Lime Kiln and Well (358682)

7.4.88 The site of a former lime kiln and well were recorded on the 1st Edition Ordnance Survey mapping to the north of a farm track near the former farmstead of Yett (179770), although they were not marked on the 2nd Edition Ordnance Survey mapping. Traces of the features were identified during groundwork, although the exact location is not recorded[28]. The lime kiln and well both represent common features in the Scottish landscape, most of which date to the late 18th and 19th centuries. Any remains that might survive as buried features may have archaeological and historical interest from the information they could hold about agriculture and settlement during the post-medieval period. The assets are considered to be of negligible value (sensitivity) due to their poor survival.

7.4.89 There is the potential for physical impacts on the remains of the lime kiln resulting from upgrades to the access road to tower WB007, although it is currently assumed that these works will be limited as they will involve upgrading an existing access track. As such, the Project is unlikely to remove all remains associated with the assets, and therefore the magnitude of change is considered to be low. On an asset of negligible value, this would result in a **negligible significance** of effect. This is not significant in EIA terms.

Castlecary High Wood (268818)

7.4.90 The site of a structure/possible farmstead, known as Castlecary at High Wood, is located between Cumbernauld and Bonnybridge at the centre of the WB overhead line, to the north of Tower WB033. The structure, which is now located in woodland was first recorded on the First Edition Ordnance Survey mapping of the area in association with a small enclosure and is assumed to be associated with pastoral activities. It is also noted as being visible on the 1982 Ordnance Survey mapping and near to an area of former industrial remains[29]. Traces also remain visible on LiDAR data for the area, although it is assumed to be a ruin. Any remains that might survive may have archaeological and historical interest from the information they could hold about agriculture and settlement during the post-medieval period, as well as possible later industrial activities if it was reused. The assets are considered to be of low value (sensitivity).

7.4.91 Work in the area of the assets are limited to the construction of a temporary stone track to provide access to Tower WB033 (this is part of a longer track that will also provide access to Towers WB029-WB37, as well as Towers CB013-CB019 which form part of the CB Route). The positioning of the structure within woodland means that the main structure

[28] NRHE Entry available at Cameron Road | Place | trove.scot, accessed 21st November 2025.
[29] NRHE entry available at Castlecary High Wood | Place | trove.scot, accessed 21st November 2025.

will not be impacted, although there is the potential for some loss of the enclosure associated with the structure. The magnitude of change to the asset is therefore assessed as low. On an asset of low value this results in a **negligible significance of effect**. This is not significant in EIA terms.

Old quarry, AECOM049

7.4.92 The site of a former quarry was identified as part of a review of historic mapping, and is located between Towers WB032 and WB033 (as well as Towers CB016 and CB017 on the CB Route). A review of LiDAR data as well as aerial photography notes that the site extends to the south, and survives as earthworks. It has some limited historical interest associated with the information it holds regarding local stone extraction and small-scale industrial activities in the post-medieval period. As an asset that is common throughout Scotland, it is considered to be of negligible value (sensitivity).

7.4.93 The quarry is located near a cable pulling area, between Towers WB032 and WB033, with the main focus of the quarry being to the south of the works areas. Due to the nature of the proposed works, it is assumed that the asset will be avoided so that stable ground can be used for the cable pulling. Any ground works that might be required will be limited to localised levelling which has the potential to result in physical impacts on the northern limits of the former quarry. As such, the magnitude of change is considered to be low. On an asset of negligible value, this would result in a **negligible significance** of effect. This is not significant in EIA terms.

Previously Unrecorded Assets

7.4.94 As noted in the 'Archaeological Potential Section' above, the archaeological potential for all periods is considered to be low or negligible due to aspects such as the marginal nature of the landscape, the lack of previously recorded assets, and previous ground disturbance. The value of any previously recorded assets that might be identified is assumed to be medium for the Roman period, and low for all other periods.

7.4.95 A worst-case scenario has been adopted for the assessment of likely impacts on previously unrecorded assets, and, as a result, it is assumed that the Project could result in the total loss of previously unrecorded assets of medium value. This would result in a Major Adverse Significance of Effect. However, it should be noted that the potential for identifying previously unrecorded assets is considered to be low, and there is potential that assets could be avoided, either fully or partially, and therefore significant effects are highly unlikely to occur.

Operational

7.4.96 Likely impacts resulting from the Operational phase are limited to impacts on the setting of heritage assets.

7.4.97 A setting Study Area of 2 km was defined at scoping, and a review of assets within this 2km Study Area identified a total of 108 designated assets comprising 27 Scheduled Monuments, three Conservation Areas, 76 Listed Buildings and the Antonine Wall WHS and associated WHS buffer. A further 622 non-designated historic environment assets were also identified comprising 611 Camore points and 10 AECOM assets (see Appendix

7.1 Gazetteer for a full list of designated and non-designated assets within the 2km Study Area).

7.4.98 A review of assets within the 2km Study Area was undertaken to identify assets where the Project will likely result in significant effects. This review was informed by the site visit, as well as ZTV data produced as part of the LVIA assessment, as well as visualisations agreed with HES through consultation. In most cases, it was determined that the introduction of a new Overhead Line was unlikely to result in a significant effects due to changes to the setting of assets as a result of the distance between the assets and the new Overhead Line, as well as screening provided by topography, vegetation/woodland, and the built environment. This was especially true of most listed buildings which are located in the settlements that flank the WB Route, with the surrounding buildings providing screening. Furthermore, the introduction of a new Overhead Line in a landscape that already contains a number of Overhead Line was unlikely to alter the general character of the area.

7.4.99 The decommissioning of the CB Route, which runs parallel to the proposed WB Route for large sections of the alignment, would also remove the potential for wirescape impacts resulting from the two Overhead Lines operating together. As such, the introduction of the WB Route would not introduce a new element into the setting of most assets, or a new impact.

7.4.100 Assets where the WB Route will likely result in a new or increased impact on setting, and where this impact has the potential to result in a significant effect in EIA terms, are detailed in Table 7.7.

Table 7-7: Assets where the WB Route will likely result in impacts from the Operation Phase.

Asset ID	Asset Name	Period	Designation	X	Y
WH1; WHB1; SM8244	Antonine Wall WHS Boundary: Antonine Wall, Rough Castle to Lime Road, and field system	Roman	World Heritage Site; Scheduled Monument	275462	676737

Antonine Wall WHS buffer (WH1, WHB1, SM8244)

7.4.101 A detailed assessment of the likely effects on the Antonine Wall WHS has been undertaken in an HIA in line with UNESCO Guidance (see Appendix 7.4, Section 5). This assessed likely effects resulting from impacts from changes to the setting of the WHS during the Operation Phase, where setting contributes to the Attributes that convey the OUV of the WHS or its Integrity and Authenticity.

7.4.102 Key Attributes of OUV for which views to and from the Antonine Wall are important include Attributes 1, 3, and 6, which cover aspects such as its original prominence and functional setting as a frontier, as well as associations between the Wall and other related assets (see Appendices A-C of Appendix 4.7).

7.4.103 While the introduction of a new Overhead Line would result in a new element in the landscape, the towers and associated wirescape would not result in impacts through changes to setting. This is partially a result of aspects such as the distance between the components of the WHS (i.e. the intervisibility between Roman assets north of the Wall and the Wall itself), as well as screening provided by topography and woodland which help limit aspects such as long ranging views.

7.4.104 Furthermore, the ability to span the WHS with towers either side of the monument means that the limited views that are currently possible along the monument in some locations (i.e. from the west of Rough Castle Fort looking east along the defences) will not be severed as there will be no new towers within the monument. Instead, the powerlines will oversail the scheduled components, with the appearance of Overhead Lines being reduced due to the extensive tree cover.

7.4.105 As such, the level of impact on Attributes of OUV as a result of changes to setting through the introduction of a new OverheadLine is considered to be '**Minor Negative Impact'** in HIA terms, which is defined as '*Research into the potential impact shows that change would be negligible*'.

7.4.106 It is considered that a Minor Negative Impact in HIA term is deemed to 'not significant' in EIA term.

Summary of Significant Effects

7.4.107 Based on the design, there are no likely significant effects resulting from the Construction and Operational phases of the WB Route.

Proposed Additional Mitigation Measures

7.4.108 Evaluation works, in the form of evaluation trenching, will be required to inform further mitigation. A detailed mitigation strategy will be agreed through consultation with stakeholders and may include, but not be limited to, full archaeological excavation, archaeological monitoring, and strip, map and record. Where possible assets will be avoided (preserved *in situ*) and will be fenced off to avoid accidental damage. Provisional mitigation types, informed by evaluation works, are set out in Table 7.8.

7.4.109 In areas where historic landscape features such as drystone walls and stone dykes cannot be avoided, any elements removed during construction will be rebuilt in the same form once construction is complete. In areas where this cannot take place due to a permanent access being required, the ends of walls / dykes should be 'made good' during the construction phase to avoid the feature deteriorating through erosion.

7.4.110 Works during the Construction Phase are likely to result in physical effects on scheduled components of the Antonine Wall WHS. While proposed access tracks works in this area will be limited to the upgrade of an existing track that is likely to be constructed in an unscheduled area between SM8244, there will be the need to undertake site clearance below the proposed WB Route line including the felling of trees/woodland. Any work within the scheduled area would require SMC, and an application for SMC will be submitted which will include a detailed proposal for site specific mitigation. As such, mitigation will be agreed as part of the SMC application and in pre-application consultation with HES.

7.4.111 Due to the nature of the Operational phase of the Project, there is no suitable mitigation, other than mitigation through design, to reduce impacts on setting resulting from the introduction of the Overhead Line. As such, no additional mitigation is proposed.

7.4.112 All mitigation works will be agreed with the relevant Local Authority Archaeological Advisor (currently assumed to be SAA), and HES in the case of designated assets, once full details of the construction works have been agreed and prior to works commencing.

Table 7-8: Mitigation methods proposed to mitigate likely effects

Mitigation Item	Location	Timing of Measure	Description	Mitigation Purpose / Objective	Specific Consultation or Approval Required	Potential Monitoring Requirements
CH-1	Throughout Project	Construction	Archaeological monitoring to be undertaken during construction and ground works (i.e., stripping for access tracks, bell-mouths, and tower foundation) in areas where archaeological remains have been recorded, and within the WHS buffer.	Identify, excavate, and record previously unrecorded archaeological features.	An Archaeological Strategy to be agreed pre-construction with the relevant Local Planning Authority Archaeological Advisor, and approved via a Written Scheme of Investigation (WSI).	Expected that day-to day works on site will be under the supervision of an Archaeological Clerk of Works (ACoW). Periodic site monitoring visits from Local Planning Authority Archaeological Advisor likely during construction. To be agreed as part of the WSI.
CH-2	Throughout Project	Construction	Archaeological monitoring to be undertaken during construction and ground works (i.e., stripping for access tracks, bell-mouths, and tower foundation) in areas in close proximity to previously recorded archaeological remains, or where the archaeological potential is considered to be higher due to aspects such as limited ground disturbance.	Identify, excavate, and record previously unrecorded archaeological features, as well as above ground features such as drystone walls.	An Archaeological Strategy to be agreed pre-construction with the relevant Local Planning Authority Archaeological Advisor, and approved via a WSI.	Expected that day-to day works on site will be under the supervision of an ACoW. Periodic site monitoring visits from Local Planning Authority Archaeological Advisor likely during construction. To be agreed as part of the WSI.
CH-3	All scheduled monuments where the Project will result in works	Construction	Temporary fencing to be installed around scheduled monuments to avoid accidental damage where construction works are undertaken in the same field as a scheduled monument.	Avoid accidental physical impacts on scheduled monuments.	An Archaeological Strategy to be agreed pre-construction with the HES as well as relevant Local	Expected that day-to day works on site will be under the supervision of an ACoW. Periodic site monitoring visits may be required by HES and the Local Planning Authority Archaeological

Mitigation Item	Location	Timing of Measure	Description	Mitigation Purpose / Objective	Specific Consultation or Approval Required	Potential Monitoring Requirements
	within the same field.				Planning Authority Archaeological Advisor, and approved via a WSI. This is likely to include agreeing buffers.	Advisor during construction. To be agreed as part of the WSI.
CH-4	Throughout Project	Construction	Temporary fencing to be installed around previously recorded assets to avoid accidental damage where construction works are undertaken within 10m of a previously recorded asset.	Avoid accidental physical impacts on scheduled monuments.	An Archaeological Strategy to be agreed pre-construction with the relevant Local Planning Authority Archaeological Advisor, and approved via a WSI.	Expected that day-to day works on site will be under the supervision of an ACoW. Periodic site monitoring visits may be required by HES and the Local Planning Authority Archaeological Advisor during construction. To be agreed as part of the WSI.
CH-5	Throughout Project	Construction	Any sections of historic landscape features removed (i.e., dry-stone walls, boundary dykes etc) to be reinstated / restored once construction has been completed. In areas where the need for a permanent access means reinstatement/restoration is not possible, exposed ends of walls and similar features should be 'made good' by a qualified individual to avoid further loss of the features through erosion.	Avoid / minimise impacts on historic landscape features, such as dry-stone walls and boundary dykes.	An Archaeological Strategy to be agreed pre-construction with the relevant Local Planning Authority Archaeological Advisor and approved via a WSI.	Expected that day-to day works on site will be under the supervision of an ACoW. Periodic site monitoring visits from Local Planning Authority Archaeological Advisor likely during construction. To be agreed as part of the WSI.
CH-6	Throughout Project	Construction	Pre- and post-condition surveys to be undertaken in fields	Avoid / minimise impacts on	Works to be agreed pre-construction	Expected that day-to-day works on site will be under the supervision of an

Mitigation Item	Location	Timing of Measure	Description	Mitigation Purpose / Objective	Specific Consultation or Approval Required	Potential Monitoring Requirements
			where construction works are being undertaken.	previously recorded heritage assets that are not expected to be disturbed (i.e., construction works not expected to break ground).	with the relevant Local Planning Authority Archaeological Advisor, and approved via a WSI.	ACoW. Periodic site monitoring visits from Local Planning Authority Archaeological Advisor likely during construction. To be agreed as part of the WSI.
CH-7	Throughout Proposed Scheme	Construction	Full open area excavation of any archaeological remains identified as part of the archaeological evaluation phase that cannot be avoided or preserved *in situ*.	Identify, excavate, and record previously unrecorded archaeological features, as well as above ground features such as drystone walls.	An Archaeological Strategy to be agreed pre-construction with the relevant Local Planning Authority Archaeological Advisor, and approved via a WSI.	Expected that day-to day works on site will be under the supervision of an ACoW. Periodic site monitoring visits from Local Planning Authority Archaeological Advisor likely during construction. To be agreed as part of the WSI.
CH-8	Scheduled Monuments	Construction	Scheduled Monument Consent (SMC) will be required for any works within a scheduled monument.	Enable work to take place in a controlled way to avoid imapcts to scheduled monuments/mitigat e imapcts to scheduled monuments.	A strategy will be developed with HES as part of the SMC application.	Expected that day-to day works on site will be under the supervision of an ACoW. Periodic site monitoring visits from HES likely during construction. To be agreed as part of the WSI.

Residual Effects

Construction

7.4.113 Table 7-9 provides a summary of pre-mitigation construction effects, mitigation measures, and residual effects for the Construction phase of the WB Route that have been described within this chapter. Significant effects typically comprise effects that are moderate or above.

Table 7-9: Residual effects resulting from the Construction Phase of the WB Route

Asset ID/ Description	Significance of Effect	Additional Mitigation	Residual Effect
Antonine Wall WHS and associated WHS buffer (WH1; WHB1; SM8244)	Minor Negative	CH-1-CH-4, CH-6-CH-8	Negligible
Cameron Farmstead (179770)	Negligible	CH-1; CH-4	Negligible
Cameron Road Lime Kiln and Well (358682)	Negligible	CH-1; CH-4	Negligible
Castlecary High Wood (268818)	Negligible	CH-1; CH-4	Negligible
Old quarry (AECOM049)	Negligible	CH-1; CH-4	Negligible

Operational

7.4.114 Table 7-10 provides a summary of impacts resulting from the Operational Phase. These remain as previously assessed due to no suitable mitigation being available, other than careful design to limit impacts on setting which is considered embedded mitigation. Significant effects typically comprise effects that are moderate or above.

Table 7-10: Residual effects resulting from the Operational Phase of the WB Route

Asset ID/ Description	Significance of Effect	Mitigation	Residual Effect
Antonine Wall WHS and associated WHS buffer (WH1; WHB1; SM8244)	Minor Negative	Not Available	Minor Negative

Monitoring

7.4.115 The requirement for archaeological monitoring would be agreed with Stakeholders as part of the mitigation strategy. This will be undertaken by an Archaeological Clerk of Works, and include work within the immediate environs of the WHS, as well as areas of previously recorded assets.

7.5 Assessment of Effects, Mitigation and Residual Effects of the Upgraded Overhead Lines (ZG, XX and XR Routes)

Introduction

7.5.2 This section examines the potential effects and impacts on sites of archaeological and cultural heritage interest resulting from the Project which includes the upgrading of overhead lines and associated works (referred to as the ZG Route, XX Route and XR Route). In each case, baseline data was collected for the Site as well as a 250m Study Area in order to assess the archaeological potential of the Site, as well as examine the potential for physical impacts. Significant effects on the setting of heritage assets resulting from the Constriction and Operational phases are not likely due to the nature of the upgrade (i.e. there will be no significant alterations to the appearance of the existing ZG, XX and XR Overhead Lines), therefore effects on setting have been scoped out of the assessment.

7.5.3 The baselines for each of the three routes are discussed separately, followed by the likely effects.

Baseline and Future Baseline Conditions

ZG Route

Geology, Topography, and Land Use

7.5.4 The ZG Route is approximately 4 km long, extending from Denny North Substation in the north (NGR NS 82443 84380) to Bonnybridge Substation in the south (NGR NS 83965 81033. It exits the Denny North Substation in a southern direction through a LoD within Tor Wood which is identified on the Ancient Woodland Inventory. The landscape comprises boggy terrain, parts of which are also planted with commercial forestry plantations. The route continues in a south-east direction with pastoral and arable fields more evident, crossing the M876 before heading south, crossing the River Carron and A883 and terminating at Bonnybridge Substation.

7.5.5 The bedrock geology across the ZG Route comprises Passage Formation which is a sedimentary rock cycle, Clackmannan group type, formed between 328 and 318 million years ago during the Carboniferous period.

7.5.6 Superficial deposit of Devensian Till, formed between 116 and 11.8 thousand years ago during the Quaternary period, covers the area from Denny substation to approximately 2.35 km south along the route. From the previously mentioned area of the ZG Route to approximately 335 m south, the superficial deposit comprises are of raised marine deposit of clay, silt and gravel formed between 116 and 11.8 thousand years ago during the Quaternary period. From the previously mentioned area of the route to approximately 0.90 km south, the superficial deposits are of alluvium clay, silt and gravel formed between 11.8 thousand years ago and the present during the Quaternary period. The final part of the ZG Route surrounding Bonnybridge Substation comprises of superficial deposits of raised marine deposits of clay, silt and gravel formed between 116 and 11.8 thousand years ago during the Quaternary period.

7.5.7 The ZG Route runs downhill from Denny North Substation located at approximately 100m AOD, to Bonnybridge Substation located at approximately 15 m AOD and is currently an area of arable farming with the exception of the A883 at the southern end of the route.

Designated Assets

7.5.8 There are five designated assets within the Study Area comprising one WHS buffer, three scheduled monuments, and a single listed building.

7.5.9 The southern element of the ZR Route, where it feeds into the Bonnybridge Substation, is immediately adjacent to the WHS buffer associated with the Antonine Wall WHS (WHB1), although the scheduled components that form the WHS are all at least 1km to the south.

7.5.10 The three scheduled monuments within the Study Area consist of a pigeon loft (SM5378) and burial ground (SM3420), both of which date to the post-medieval period, as well as a dun (SM6929) which dates to the Iron Age.

7.5.11 The single listed building within the Study Area is the Category B listed Dunipace Bridge (LB3959) dating to the 18th century.

Prehistoric – Palaeolithic to Bronze Age (40,000BC to 800BC)30

7.5.12 A total of three assets dating to the prehistoric period were identified within the Study Area, consisting of a Neolithic findspot at an Iron Age scheduled monument and two non-designated historic environment assets. Of these assets, none fall within the Site.

7.5.13 The Upper Palaeolithic and Mesolithic periods saw occupation by hunter-gatherer communities from roughly 12,500 BC to 4000 BC, transitioning from a cold, glacial climate to warmer, post-Ice Age conditions. Evidence, primarily lithic scatters (stone tool debris), suggests small, mobile groups living in families, following seasonal ranges with no fixed settlements, and relying on foraging, hunting, and fishing in a changing landscape.[31]

7.5.14 Southwest Scotland has played a crucial role in developing our understanding of Mesolithic Scotland. Initial interest was sparked by local antiquarians like John Smith of Dalry and William Downs of Irvine. Their explorations recovered lithic assemblages that would later be termed 'pygmy flints' at Ardeer, *Shewalton* and elsewhere in the region (Smith 1882; Smith 1893; and Smith 1895).[32]

7.5.15 There is an oak assemblage which was recovered during a watching brief, conducted between November 2012 and July 2013, which may have Mesolithic origins. It comprised of a spread of large oak logs with axe-dressed ends. Cartographic evidence indicates that in the late-18th century, when attempts were made to channel the water in the north of the Mire south towards Saltpans, the oaks were exposed and in order to clear the way for the channel they were chopped up into manageable lengths and moved to one side.[33]

7.5.16 By the Neolithic period, between 4000 BC to 2500 BC, there was a change from the hunter-gatherer lifestyle to the widespread adoption of agriculture. Some of the local and regional characteristics of this period were noted by James Robertson, in 1768, that ancient arrows

[30] Due to the varied nature of the Scottish landscape, and the resulting variations in settlement/land use, there is no agreed chronology at a national level. As such, the dates that have been assigned to the various periods for the baseline study are those set out in the Scottish Archaeological Research Framework (ScARF) available at Panel Reports Chronology and Downloads | The Scottish Archaeological Research Framework.
[31] SWSARF Introduction of the Palaeolithic and Mesolithic, available online 4.1 Introduction | The Scottish Archaeological Research Framework
[32] SWSARF Introduction of the Palaeolithic and Mesolithic, available online: 4.1 Introduction | The Scottish Archaeological Research Framework
[33] Crone A (2021) *Torwood Mire, Denny, Watching brief and post-excavation programme*. in Jennifer Thoms Discovery Excav Scot New 21 2020 Cathedral Communications Ltd, Wiltshire, England. Page(s): 57-58

had been tipped with pitchstone; a distinctive volcanic glass widely used in Southwest Scotland during the Neolithic and sourced almost exclusively from Arran (Mann 1918, 141).[34]

7.5.17 A single asset from the Neolithic period is recorded on the NRHE, it comprises a findspot of a polished stone axe head (294415). The axe head was recovered from Larbert, Househill Farm approximately 221 m from the ZG Route. A shale leaf shaped point, also possibly dating to the Neolithic, was recorded near the scheduled Doghillock Broch (SM3420). While the broch dates to the Iron Age, the leaf shape point suggests earlier activity on the site.

7.5.18 The Bronze Age is a term used to define the period of time which spans the introduction of metallurgy and the first use of metal objects; a time frame extending from around 2450 BC to 800 BC. Daggers, rapiers and swords have all been recorded from Southwest Scotland.

7.5.19 There are no assets records on NRHE with the ZG Route or Study Area relating to the Bronze Age period.

Iron Age and Roman (800BC to AD400)

7.5.20 Three assets dating to the Iron Age and Roman Period have been recorded within the Study Area, although all of the assets fall outside of the Site.

7.5.21 During the Iron Age period there were a variety of settlement types such as brochs, duns, and roundhouses, particularly in northern and western Scotland. Settlement activity within the Central Belt varies, with larger fortified structures such as duns and broches found in the upland areas, while enclosed settlements and field systems become more prevalent in the lower lying zones. This is a pattern which is also visible within the ZG Route Study Area, which varies from the low-lying land of the River Carron in the south, to the more elevated landscape of the north.

7.5.22 Iron Age activity within the Study Area includes Doghillock Dun (SM6929) 84 m from the northern end of the ZG Route. This comprises a stone structure some 15-20m in diameter and was identified as such during the 1980s when walling was visible. A findspot of a leaf shape shale object (47047) was retrieved from the foot of this hillock as discussed above under the Neolithic. The site has been heavily truncated by later quarrying activity, and the dating of the site is based on its form.[35]

7.5.23 Other examples of Iron Age activity include Tappoch Broch (SM1738) which is located approximately 910 m to the northeast of the ZG Route, as well as Wester Carmuirs ring ditch settlement, which survives as a crop mark site to the south of Bonnybridge Substation (SM6413). The broch is a substantial stone-built roundhouse, roughly circular drystone structure with a wall around 6m thick. The broch is enclosed by the remains of three ramparts which would have run up to the cliff edge to the west. The outermost rampart is very slight, and the full extent is difficult to trace.[36]

[34] SWSARF Introduction of the Neolithic, available online: 5.1 Introduction | The Scottish Archaeological Research Framework
[35] Ewart G (2017) *Doghillock Dun, Topographic survey*. Discovery Excav Scot New 17 2016 Cathedral Communications Limited, Wiltshire, England. Page(s): 78-79
[36] Historic Environment Scotland, available online: https://portal.historicenvironment.scot/apex/f?p=1505:300:::::VIEWTYPE,VIEWREF:designation,SM1738

7.5.24 There are no assets recorded on the NRHE relating to the Iron Age period within the ZG Route.

7.5.25 The earliest evidence of Roman campaigns in Scotland began in the 70s AD under the Emperor Vespasian and his sons, the Governor Agricola. By both land and sea, it took him only seven years to take Rome's first conquest of territories in Scotland. To solidify their position, some forts were built including examples that would later become the line of the Antonine Wall.[37]

7.5.26 By AD 140 the construction of the Antonine Wall (part of the Frontiers of the Roman Empire WHS), under the new emperor Antoninus Pius, had begun and the northern boundary of the empire was expanded into Scotland.[38] .[39] While the Antonine Wall lies at least 1km south of the ZG Route, the WHS buffer is located approximately 250m to the south of the southern limits of the ZG Route

7.5.27 There is evidence for Roman activity within 28 m of the ZG Route comprising cropmarks and physical evidence for a Roman road (140980) from Camelon to Ardoch. The Roman Road is also shown on the 1st edition OS map of 1861 (1861, Area of St Ninians, scale six inches to one statute mile, Sheet XXIV, published by the Ordnance Survey of Southampton 1865).

Medieval (AD400 to AD1500)

7.5.28 The ZG Route is within the Central Belt of Scotland within an area of agricultural land. Despite the lack of modern archaeological excavations, it was concluded by Piers Dixon (2003) that the medieval settlement pattern of the wider lowland Scotland was a mixture of large and small row villages, moated manors and granges.[40] As Strat Halliday (2003) describes, ridge and furrow cultivation was a traditional feature of the landscape.[41]

7.5.29 A single findspot of a mid-9th century silver brooch (47051) was recovered from the immediate vicinity of the well-known mounds of Dunipace, approximately 116 m from the ZG Route. Other than this there is no other evidence of Medieval activity within the route or wider Study Area. It is likely that the ZG Route was predominately agricultural land until it was later developed in the post-medieval period.

Post-Medieval (AD1500 to AD1900)

7.5.30 A total of 11 assets dating to the post-medieval period were identified within the Study Area, consisting of two scheduled monuments, one listed building and eight non-designated historic environment assets. Of these assets, one falls within the ZG Route, namely Dunipace Weir (278973).

7.5.31 Early cartographic sources, such as the County Surveys, provide limited information regarding land use due to their scale. However, they show a rough settlement pattern that

[37] The Antonine Wall (2025) available online: https://www.antoninewall.org/about-the-antonine-wall/the-romans-in-scotland
[38] Historic Environment Scotland Antonine Wall | Lead Public Body for Scotland's Historic Environment
[39] Historic Environment Scotland Antonine Wall | Lead Public Body for Scotland's Historic Environment
[40] Historic Scotland (2003), Medieval or later rural in Scotland: 10 years on, P.63 available online https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=83f2d554-5ba1-4bbe-a7a8-a5aa00e85f81
[41] Historic Scotland (2003), Medieval or later rural in Scotland: 10 years on, P. 77 available online https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=83f2d554-5ba1-4bbe-a7a8-a5aa00e85f81

largely represents the modern settlement pattern with a focus on the lower lying areas near the River Carron and the Bonny Water to the south, as well as the valley of the Forth to the north.

7.5.32 The first detailed survey of the ZG Route is the General Roy Survey dating to the mid-18th century[42]. This shows most of the ZG Route as arable land, with limited areas of possible pasture in the more upland areas, at the northern end of the Study Area, where the Denny North Substation is located. The settlement pattern on the Roy Survey can also be traced in the contemporary landscape, with most settlement names also relatively unchanged between the Roy Survey and the modern landscape. This includes Dunipace and Househill near the southern end of the ZG Route, and Dunhillock at the north. The survey also depicts the scheduled motte and adjacent kirk/cemetery at Dunipace (SM3420).

7.5.33 The first detailed map survey was undertaken between 1843 to 1882 (OS) (1861, area of St Ninians, Sheet XXIV, scale six inches to one statute mile, published by Colonel Sir H James, 31st January 1865) shows the area that would be the ZG Route as largely agricultural fields with Torwood just south of the Denny Substation and the River Carron and Scottish Central Railway at the southern end of the ZG Route.

7.5.34 There is an example of ridge and furrow which may date to the post-medieval period and would align with the agricultural land use presented within the historical mapping. This is located 53 m from the ZG Route, ridge and furrow (47038).

7.5.35 By the second survey of 1892 (OS) (1896, Second Edition, Sheet XXIV, scale six inches to one statute mile, published at the Ordnance Survey office, Southampton, 1899) the ZG Route land use remained the same as arable agriculture, with this form of land use especially prevalent in the open fertile land of the south of the route. Areas of what appear to be unimproved lands, presumably used for pasture, are shown in the area surrounding Denny Substation, while a combination of arable and possible pasture is noted in the undulating land at the central part of the route. There were also areas of dense woodland, which appeared on previous historical mapping. These, however, where unnamed and are now labelled on the 1892 map as Big Wood, Glebe Wood, Rasp Wood, Black Wood, Mine Wood, Kings Wood and Pamphellgoat Wood, which are all present today. A quarry is depicted at the outskirts of Big Wood (AECOM001) which is no longer extant.

7.5.36 Within 26 m of the ZG Route is Dunipace Park dovecot and the site of the former Dunipace House (47014 and 141851 respectively). The dovecot was formerly known as “The Place of Dunipace”, and consists of a tower which, though it is now converted into a dovecot, evidently once contained the external stair of a mansion, together with two short lengths of walling set at right angles to one another and evidently representing the last remains of an L-shaped house of a type commonly datable to the turn of the 16th and 17th centuries.[43] There are associated parks and gardens which are dated to the same period.

7.5.37 There is also a record for Hill of Dunipace (SM3420), or Dunipace Chapel (47050), located 116 m from the ZG Route, which was a Roman Catholic chapel, but it was used as the parish church after the Reformation. There is also an associated cemetery, which from the

[42] General Roy Survey available at Georeferenced Maps viewer - Map images - National Library of Scotland, accessed 22nd November 2025.
[43] RCAHMS (1978 b) *The archaeological sites and monuments of Clackmannan District and Falkirk District, Central Region,* The archaeological sites and monuments of Scotland series no 1 Edinburgh.

headstone likely dates to the 17th century and a possible motte, which is indicated in an 18th century account of the chapel. A graveyard with ruins of a church is depicted on the 1st edition of the OS 6-inch map (1865) - Stirlingshire, Sheet XXIV. The chapel, motte and burial ground are all within the scheduling.

7.5.38 There is a Category B listed building dating to the 18th century from this period (LB3959, 141849) which comprises a bridge of three arches that is located over the River Carron, 115 m from the overhead line. Its special interest derives from the severe water pollution staining the underneath of the stonework.

7.5.39 There is also a Scheduled Monument (SM5378), a house which has remains dating to the 16th to 17th century, located 19 m from the ZG Route. It has since been converted into a dovecot or pigeon loft. All that survives of the house is an external roofless stair tower and a small portion of walling on the south side containing an arched opening with a segmental head and a doorway above (both blocked).

7.5.40 There is also evidence of industrial activity in the ZG Route and within the Study Area, seen by Thorndyke quarry (227296), located 159 m from the ZG Route, and depicted on the second edition 1897 OS map (1895, Second Edition 1897, Sheet XXIV.5, scale 25.344 inches to a statute mile, published by the director general at Ordnance Survey office, Southampton, 1897).

7.5.41 Other notable evidence of industrial activity includes weirs which were built on the River Carron, to channel water to provide power for the Carron Company, then one of the world's most advanced ironworks. Much of the machinery and the waterpower generation was designed by John Smeaton. One of the weirs is within the area of the ZG Route (27897), was designed in 1773 and was probably built soon after this date.[44]

Modern (AD1900 to Present)

7.5.42 A total of two assets dating to the modern period were identified within the Study Area, consisting of two non-designated historic environment assets. Of these assets none falls within the ZG Route.

7.5.43 The first of these is Bonnybridge Power Station (105789) on which parts of the existing Bonnybridge Substation are located. It was built in 1910 and was coal-fired, with the complex straddling the Denny Branch Railway Line which was located within the Site. The power station was extended at various stages throughout the mid-20th century until the late 1960s, when it was decommissioned, with the site demolished in the mid-1970s.

7.5.44 The second asset is in Todhill, a World War Two searchlight cluster, which is visible on an RAF air photograph (106G/Scot/UK/0085/ 3056) taken on 10 May 1946 (361353). It was one of about 150 searchlight batteries that were constructed to protect the industries in the centre of Glasgow and along the banks of the River Clyde from aerial attack by the Luftwaffe during WWII. However, it has since been removed and the site is now an arable field, located 94 m from the ZG Route.

7.5.45 Land use within the Study Area during the 20th century has remained largely agricultural. This is clearly evidenced in the 1913 OS Surveys (1913, Edition of 1922, Sheet XXIII, scale

[44] R Paxton and J Shipway (2007) Reproduced from 'Civil Engineering heritage: Scotland - Lowlands and Borders' with kind permission from Thomas Telford Publishers.

six inches to one statute mile, published by director general at Ordnance Survey office, Southampton, 1922) and (1913, Edition of 1921, Sheet NXXIV, scale six inches to one statute mile, published by director general at Ordnance Survey office, Southampton, 1921).

7.5.46 By the time of the 1958 to 1964 OS map (1958-1964, Ordnance Survey, Sheet NS 88 SW, six inches to one statute mile, published by the Director General of the Ordnance Survey, Chessington, Surrey, 1967), Bonnybridge Substation is depicted with associated powerlines extending to the north. Evidence of tree clearance can be seen around the area of Pamphellgoat Wood but otherwise the area remains the same as on previous mapping. The Hills of Dunipace, church and burial ground (47050) are also marked.

7.5.47 By the time of the latest historical mapping available on the National Library of Scotland, dating 1958 to 1974 (OS) (1958-1974, Ordnance Survey, Sheet NS 88 SW, scale 25 inches to one statute mile, published by the director general of the Ordnance Survey, Southampton), Denny Substation and Bonnybridge Substation are depicted and the line of the ZG Line is present. The route is the same as it is currently and shows that the Site remained largely the same, except for clearance of Pamphellgoat Wood.

Undated

7.5.48 Within the area of Tod Hill there are two assets with no assigned dating on NRHE. These include a field boundary (47043), located 228 m from the ZG Route and a linear feature (47044), located 53 m from the ZG Route.

7.5.49 There is also a series of natural mounds 116 m from the ZG Route in the valley of the River Carron, named the Hills of Dunipace (47049). There are no signs of any defensive or other works on them.

7.5.50 There are several buildings recorded on the NRHE which are registered as undated, such as Bonnybridge Cottage (241822) and Threep wood House (278965). While undated on the NRHA, these are assumed to date to the post-medieval period.

Site Visit

A Site Visit of the Project was undertaken between the 3rd to the 7th November 2025, with the ZG Route examined on the 3rd November. The purpose of this visit was to view the existing overhead line in the landscape, as well as examine areas of proposed works such as compounds and access tracks to inform the baseline and assessment of archaeological potential. Weather conditions varied from overcast with low cloud and heavy rain showers, but in general the conditions allowed good views of the landscape.

7.5.51 The site visit did not identify any new assets, with the landscape consisting of arable fields, although larger areas of commercial woodland were noted near the northern end of the ZG Route. In most areas access tracks will be able to utilise existing roads/tracks with no upgrade or minor works.

7.5.52 General site photos taken to illustrate ground conditions and the ZG Route are provided in **Appendix 7.2: Site Photos**.

Previous Archaeological Investigations

7.5.53 A watching brief, conducted by AOC Archaeology Group between November 2012 and July 2013, found a spread of large oak logs with axe-dressed ends. These were recorded and sampled. The project was a part of the Beauly to Denny 400KV Overhead Transmission Line Project and a new substation was also built by Scottish Power at Torwood Mire.

LiDAR and Aerial Photographic Review

7.5.54 A review of LiDAR data and aerial photographs was also undertaken alongside the review of historic mapping as part of the baseline assessment. This did not identify any new assets within the Study Area, although areas of ground disturbance were noted around the existing substations.

Archaeological Potential

7.5.55 The review of baseline conditions has noted that the landscape of the ZG Route and Study Area has been exploited from the prehistoric period onwards. While previously recorded assets within the Study Area are relatively limited, the varying landscape, which includes the lower lying land of the River Carron to the south, and the slightly elevated land to the north that overlooks both the River Carron and the River Forth, would have represented a suitable area for exploitation for early hunter gatherers as well as the more sedentary peoples of the Bronze Age and Iron Age. As such, there is considered to be medium potential for previously unrecorded assets dating to the prehistoric period. Any previously unrecorded asset is likely to be of local importance, and therefore of Low Value (sensitivity).

7.5.56 Roman activity has been noted near the southern end of the ZG Route, around the line of the Antonine Wall. However, this activity appears to be focused to the south of the River Carron where the Wall occupies the slightly higher ground outside of the ZG Study Area. Some remains have been noted north of the Antonine Wall, in the valley of the River Carron, and as such there is the potential for previously unrecorded Roman remains in the southern end of the ZG Route Study Area, although the potential is considered to be low. Any previously unrecorded assets are likely to be of regional importance due to possible associations with the Antonine Wall, and earlier Roman incursions into Scotland, and as such would be considered to be of Medium Value (sensitivity).

7.5.57 From the medieval period onwards, it is assumed that the landscape of the ZG Route Study Area was largely agricultural, with the main settlements outside of the Study Area. Furthermore, mapping from the 19th century onwards provides good evidence of land use, and demonstrates that most of the ZG Route passes through agricultural land. As such, the potential for previously unrecorded assets dating to the medieval and post-medieval period is considered to be negligible. Any previously unrecorded assets are likely to be of local importance, and therefore of Low Value (sensitivity).

Future Baseline

7.5.58 Based on current knowledge, the future baseline is unlikely to change in the absence of the Project. Changes may occur as a result of other developments which could result in physical impacts, as well as impacts resulting from changes to the setting of assets.

7.5.59 Land use within the Study Area is likely to remain the same, and as such there is the potential for some degradation of buried archaeological remains in areas of arable cultivation.

7.5.60 Climate change could result in impacts to cultural heritage through aspects such as erosion resulting from extreme weather events. However, the extent to which this could occur is unknown.

XX Route

Geology, Topography, and Land Use

7.5.61 The XX Route is approximately 15 km long, extending from Easterhouse Substation in the west (NGR NS 70447 67016) to Newarthill Substation in the East (NGR NS 78189 60807) (Figure 7.5). It is routed in an eastern direction from Easterhouse towards Glenmavis. It is routed east / south-east around Glenmavis but as part of the Project will be diverted to tie into the New-build Overhead Line (WB Route). It continues south to the west of the Albert Bartlett Factory and then is routed to the northeast and east of Airdrie on the margins of the town. The terrain predominantly comprises agricultural farmland. It is routed through the housing estates of Chapelhall before crossing the M8 to the west of Newhouse and then terminating at Newarthill Substation.

7.5.62 The bedrock geology across the XX Route mostly comprises of Scottish Lower Coal Measures Formation, formed by sedimentary rock cycles. The coal measures formed between 319 and 318 million years ago during the Carboniferous period. There is an area of differing bedrock geology around Forrest Street A89, which comprises Midland Valley Sill-complex, Quartz-microgabbro formed between 330.9 and 298.9 million years ago during the Carboniferous period, that extends approximately 100m across the route.

7.5.63 Superficial deposits of Devensian Till, formed between 116 and 11.8 thousand years ago during the Quaternary period, covers the area from the Easterhouse Substation to approximately 450 m northeast. From the previously mentioned area to approximately 430 m further along the XX Route to the railway line, the bedrock is overlain by superficial deposits of alluvium, including clay, silt and gravel, formed between 11.8 thousand years ago and the present during the Quaternary period. From the railway line previously mentioned, extending approximately 270 m north along the route, a superficial deposit of sediment, formed between 2.588 million years ago and the present during the Quaternary period, covers the area. Superficial deposits of Devensian Till, formed between 116 and 11.8 thousand years ago during the Quaternary period, covers the area from the previous mentioned area extending 630 m east. A thin band of peat superficial deposit, formed between 2.588 million years ago and the present during the Quaternary period, extends from the previous mentioned point approximately 115 m to the east. The superficial deposit of Devensian Till, formed between 116 and 11.8 thousand years ago during the Quaternary period, continues 890 m east along the XX Route.

7.5.64 The remainder of the XX Route contains superficial deposits of Devensian Till, formed between 116 and 11.8 thousand years ago during the Quaternary period, with bands of alluvium of clay, silt and gravel, formed between 11.8 thousand years ago and the present during the Quaternary period, in the area surrounding Gartverrie Farm, approximately 200 m wide and the area of Ryden Mains, approximately 150 m wide.

7.5.65 The lowest point of the route is at Easterhouse Substation, at 75 m aOD, with the highest point of the route being around the Stand Road at 208 m aOD. The XX Route is mostly arable agriculture but also includes leisure golf courses and the town of Coatbridge. The southern end of the route has the M8 passing east to west below the route of the overhead line.

Designated Assets

7.5.66 There are five designated assets within the Study Area of the XX Route, all of which are listed buildings. These comprise of three Category C listed buildings: Clarkston Church, Airdrie (LB356130), St Aloysius Church, Main Street, Chapelhall (LB397191) and Presbytery, St Aloysius Church, Chapelhall (LB397192). The two remaining designated assets are Category B listed buildings, Wester Moffat House, Clarkston (LB356139) and Chapelhall Parish Church, Russell Street, Chapelhall (LB354057).

Prehistoric – Palaeolithic to Bronze Age (40,000BC to 800BC)[45]

7.5.67 During the Palaeolithic, Scotland's climate was dominated by the end of the Ice Age with periods of extreme cold, such as the Younger Dryas, characterised by the local development of ice caps and valley glaciers and the development of permafrost[46]. The surrounding area of the XX Route was first inhabited and cultivated in the Neolithic period. This period saw the transition from hunter gatherers to farming communities working agricultural land and the development of permanent settlements.[47]

7.5.68 Within 145 m of the XX Route is Woodend Loch where several lithic implements (45770) were recovered. These may indicate activity in the area.

Iron Age and Roman (800BC to AD400)

7.5.69 Scottish Iron Age archaeology has traditionally focused on defensive sites, such as brochs and hillforts but has expanded in recent years to include funerary evidence and ritual sites. The structure of society, as revealed through its material culture, reveals evidence for differentiation and regional patterning, suggestive of regional identities and idiosyncrasies, as well as wider links to communities elsewhere in Britain and in Europe.[48]

7.5.70 It has long been argued that the people of Iron Age Scotland were far from isolated and this has been dramatically demonstrated by the discovery of a burial accompanied by an assembled chariot located at Newbridge, west of Edinburgh, where dating and form show links with the Continent, but the technological details show insular origins.[49]

7.5.71 While more extensive evidence for Iron Age activity has been recorded in the wider landscape, there is no evidence for Iron Age activity within the XX Route and Study Area.

[45] Due to the varied nature of the Scottish landscape, and the resulting variations in settlement/land use, there is no agreed chronology at a national level. As such, the dates that have been assigned to the various periods for the baseline study are those set out in the Scottish Archaeological Research Framework (ScARF) available at Panel Reports Chronology and Downloads | The Scottish Archaeological Research Framework.
[46] Scottish Archaeological Research Framework, available online: https://scarf.scot/thematic/scarf-science-panel-report/4-people-and-the-environment/4-8-palaeoclimatology/
[47] National history museum, available online: Neolithic Britain: where did the first farmers come from? | Natural History Museum
[48] Scottish Archaeological Research Framework, available online: 1. Introduction | The Scottish Archaeological Research Framework
[49] SCARF, available online: https://scarf.scot/national/iron-age-panel-report/1-introduction-4/

7.5.72 An archaeological review for the XX Route found no Roman artifacts within the site or its 250m buffer area, based on NRHE records. While the Romans never fully conquered Scotland, Roman forces made repeated, though temporary, advances into the territory known as Caledonia[50].

Medieval (AD400 to AD1500)

7.5.73 No assets positively dated to the medieval period have been recorded within the XX Route Study Area, although two areas of ridge and furrow have been noted through a review of aerial photography and LiDAR data (AECOM030 and AECOM034). This form of agriculture remained in use from the medieval period into the post-medieval period, and as such its dating is difficult.

7.5.74 The XX Route is within the Central Belt of Scotland within an area of agricultural activity. Despite the lack of excavations, it is concluded by Piers Dixon (2003) that the medieval settlement pattern of lowland Scotland was a mixture of large and small row villages, moated manors and granges.[51] As Strat Halliday (2003) describes ridge and furrow cultivation was a traditional feature of the landscape.[52]

7.5.75 The XX Route passes around most settlements, or the historic core of settlements, and as such it passes through the agricultural landscape that would have surrounded, or been associated with, many of these settlements of medieval origin.

Post-Medieval (AD1500 to AD1900)

7.5.76 A total 46 assets dating to the post-medieval period were identified within the Study Area, consisting of four listed buildings and 43 non-designated assets. Of these assets 11 fall within the Site.

7.5.77 Early County Surveys of the XX Route Study Area provide limited information regarding land use due to their scale. However, they show a rough settlement pattern that largely represents the modern settlement pattern with a focus on the lower lying areas along the River Kelvin to the northwest and the River Clyde to the west.

7.5.78 The first detailed survey of the XX Route is the General Roy Survey dating to the mid-18th century[53]. This shows the land use and settlement pattern largely corresponding to that which survives in the contemporary landscape, with nucleated farmsteads within an agricultural landscape dominated by arable cultivation. Only limited areas are depicted as pasture/semi-improved land or moss/moor, and area of moss include Drumshangie Moss (recorded as *Drumshiach*) to the north of Airdrie, as well as *Drumbon* which is now the site of Roughrigg Reservoir.

7.5.79 The first detailed map survey of the area around the XX Route was undertaken between 1858 to 1859 (OS) (1858-1859, *area of Cadder,* scale six inches to one statute mile,

[50] Historic UK limited, available online: The Romans in Scotland - Historic UK
[51] Historic Scotland (2003), Medieval or later rural in Scotland: 10 years on, P.63 available online https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=83f2d554-5ba1-4bbe-a7a8-a5aa00e85f81
[52] Historic Scotland (2003), Medieval or later rural in Scotland: 10 years on, P. 77 available online https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=83f2d554-5ba1-4bbe-a7a8-a5aa00e85f81
[53] General Roy Survey available at Georeferenced Maps viewer - Map images - National Library of Scotland, accessed 22nd November 2025.

published by Colonel Sir H James, 1864). This depicts the XX Route as largely agricultural fields. The northern most end of the route has Woodend Loch, Lochend Loch and Cottage Wood as predominate features in the landscape. The central part of the XX Route shows the village of Airdrie comprising of terrace housing. Close to the Monkland and Kirkintilloch Railway and Witch Wood, there are two sand pits which are depicted and are currently used as a car park (AECOM002 & AECOM003). There is also further evidence of industry within the Study Area in the form of a Coal Pit (AECOM004). At the southern end of the XX Route, historical mapping of 1859 (OS) (1859, area of new Monkland, Sheet VIII, scale six inches to one statute mile, published by Colonel Sir H James, 1864) shows the Site as largely agricultural fields within an area of industry, namely Legbranock Colliery, comprising a Coal and Iron Stone Pit (AECOM005), old coal pit (AECOM006) and old coal pit (AECOM007).

7.5.80 Within the XX Route, depicted on the First Edition OS mapping (Lanarkshire VIII.6, surveyed 1858, published 1860) a coal pit is also marked (AECOM026). Further evidence for industrial activity within the Study Area during the post-medieval period includes three coal pits (165068, 165070 and 165069). These are situated within the XX Route and are depicted on the 1st edition of the OS 6-inch map (Lanarkshire 1864, Sheet VIII), but by the time of the 2nd edition OS map (1899) they are shown as a water-filled hollows. Remains of four coal shafts were identified during an archaeological walkover survey carried out in March 2002. The coal shafts (242449) were dated to pre- 1852 and are located 84 m from the XX Route.

7.5.81 By the second survey of 1899 (OS) (1897, Second Edition 1899, Sheet VII.N.E and Sheet VIII.S.W, scale six inches to one statute mile, published at the Ordnance Survey office, Southampton, 1899), the XX Route remained the same, predominantly used as arable agriculture, with possible pasture noted in the undulating land in the area surrounding Gartcloss Cottage. Garthsherrie Colliery (AECOM019) was identified on this mapping and consisted of Pit No. 1 and Pit No.2, as well as associated structures and railway sidings. Close to this Colliery an Old Coal Pit (AECOM020) and air shaft (AECOM021) are marked on the Second Edition OS map. Coal pit (AECOM026) is not shown on the second edition OS map, suggesting it has been backfilled. At the southern end of the XX Route, the village of Airdrie has expanded significantly compared to previous mapping with additional terrace housing and an industrial railway.

7.5.82 The former site of Lauchope House (45791), located to the west of the XX Route, was in the possession of the Muirhead family prior to 1570, after which it was owned by the Roberton family. The date of its origin is unknown, however, it was largely rebuilt after it was burned in 1570. The site of the house, which has been demolished, lies immediate north of the M8 motorway.

7.5.83 Wester Moffat Hospital (200977) dates to 1860 and is located 188 m from the XX Route.

7.5.84 There are also several religious buildings recorded on the NRHE, including the St Lasrach Chapel (74166), located 127 m from the XX Route. By the 1913 edition 6-inch OS map (Lanarkshire 1913, Sheet viii.SE), the site had been lost beneath extensive spoil heaps, though the description survived, being annotated to the west. Clarkston Parish Church (LB20925), dating to the 19th century, is another example of a religious building within the

Study Area, situated approximately 30 m from the XX Route, whilst Aloysius Church (LB49607), dating to the 19th century, is located on Main Street, 111 m from the XX Route.

7.5.85 There is also a concentration of industrial activity along the XX Route within Airdrie. This includes an Engine House (362628), located 198 m from the XX Route, first depicted on the OS map of 1859 and located on the northern extent of the Thrushbush Incline. Also located along the Thrushbush Incline is an old coal pit (362629), located within the XX Route, annotated as an old shaft on historical maps, which may indicate this mining facility had fallen out of use. An Old Coal Pit (362635) located 235 m from the XX route, that is first annotated and depicted on the OS map of 1859, is accompanied by two small square structures set within a large circular enclosure. The mine was in close proximity to the Ballochney Railway Line. There is also Thrushbush Pit (362630), located within the XX Route, which is first depicted on the OS map of 1859. The mine is no longer in use by the time of the second edition OS map of 1897. Finally, Holehills Coal Pit (362643), located 153 m from the XX Route, is first depicted and annotated on the OS map of 1859 and is shown comprising of a rectangular structure set within a large enclosure. It is also linked by a railway to the Ballochney Railway. By 1897 the pit no longer existed, and has been superseded by the Rawyards Brickworks.

7.5.86 Other industrial evidence includes a brickworks (45766), located 221 m from the XX Route, three rectangular features (136043), recorded within the XX Route, spoil heaps (135926), located 105 m from the XX Route, Burnlip Cottage (135932), located 45 m from the XX Route, a well at Burnlip Road (135933), located 72 m from the XX Route, an old limekiln (135934), located within the XX Route, a quarry (135936), located in Gartverrie approximately 76 m from the XX Route, a ruined farmstead (135941), located 41 m from the XX Route, and finally a farmstead, old field boundaries and Palace Farmstead (135935), located 78 m from the XX Route.

7.5.87 Agricultural activity recorded within the area during this period comprises largely of farmsteads which are depicted on the 1st edition of the OS 6-inch map (Lanarkshire 1864), many of which have since been demolished. These include an unnamed farmstead at the site of Newhouse Industrial Estate (179791), located 41 m from the XX Route, Thrushbush Farmstead (362624), located 240 m from the XX Route, Holhills Farmstead (362638), located 236 m from the XX Route and Burn Wood farm (179797), located within the XX Route.

7.5.88 There is also some evidence of ridge and furrow located within the XX Route, observed through LiDAR, (AECOM022), (AECOM023) and (AECOM034), as well as examples in the wider Study Area (AECOM030). There is also a possible crop mark identified by LiDAR (AECOM025); however, this may be a modern utility.

7.5.89 The increase in industrial activity meant the need for increased transportation. Further evidence for railways includes Garnqueen Railway Junction (220035), located 240 m from the XX Route. There is also a waterway, known as Monkland Canal, which directed water from various reservoirs including Hillend Reservoir (209700), 74 m from the XX Route and Woodend Loch (209712), 224 m from XX Route. This waterway is clearly marked on the 1st edition of the OS 6-inch map (Lanarkshire 1864, Sheet viii) and still remains present on current mapping.

7.5.90 Other assets dating to this period include a historical steam boiler (45767) that is recorded 221 m from the XX Route, comprising a cylindrical boiler with hemispherical ends, heated by a furnace underneath.

Modern (AD1900 to Present)

7.5.91 A total of five assets dating to the modern period were identified within the Study Area, consisting of one listed building and four non-designated assets. Of these assets one falls within the XX Route.

7.5.92 By the survey of 1910 (OS) (1910, Edition of 1914, Sheet VII.N.E, scale six inches to one statute mile, published by the Director General of the Ordnance Survey, Southampton, 1914), the XX Route continues to be dominated by agriculture, with the centre of the XX Route including the settlement of Gartshire.

7.5.93 By the time of the OS survey conducted between 1955 to 1964 (OS) (1955-1964, *Ordnance Survey,* scale six inches to one statute mile, Sheet NS 76 NW, published by the Director General of the Ordnance Survey, Chessington, Surrey, 1967), Easterhouse Substation is depicted. The village of Coatbridge has expanded to the north and the agricultural fields are limited to the area surrounding Easterhouse Substation. The southern end of the XX Route remained the same as previous mapping with Clydesmill Substation present.

7.5.94 There is evidence of an increase in industrial activity during this period such as Knowehead Colliery (132387) located within the XX Route. This mine was first opened in 1949 but was closed by 1962.

7.5.95 There are also two distilleries located within the Study Area, Chapelhall, Inver House Distillery (167298), located 70 m from the XX Route, originally known as Garnheath Distillery, formerly Moffat Paper Mills, that was converted to a distillery in 1965 and closed in 1985. There is also Glen Flager Distillery (298234) which is within the same complex as Inver House Distillery and was in use between 1965 to 1985 also.

7.5.96 Other notable modern features include Airdie Golf Course (307825), which is located 191 m from the XX Route and which has modified this part of the landscape.

7.5.97 Located on Chapelhall Parish Church, approximately 222 m from the XX Route, there is also a war memorial plaque (228003), dating to the 20th century.

Undated

7.5.98 Two assets within the Study Area remain undated. These are linear features recorded as part of the LiDAR review (AECOM023 and AECOM025), both of which may be buried services.

Site Visit

7.5.99 A Site Visit was undertaken between the 3rd to the 7th of November 2025. The purpose of this visit was to view the existing overhead line in the landscape, and look for situations where moving towers, or increasing the height of towers, may result in significant impacts on heritage assets. Weather conditions varied from overcast with low cloud and heavy rain showers, but in general the conditions allowed good views of the landscape.

7.5.100 The Site visit also involved examining the access track works. It was, however, noted that in most areas access tracks will be constructed using non-intrusive methods thereby removing the potential for impacts .

No new assets were recorded as part of the walkover survey, and none of the bell mouths are situated on stone walls, they are situated on hedge lines with no historical value.

LiDAR and Aerial Photographic Review

7.5.101 A review of LiDAR data and aerial photographs was also undertaken alongside the review of historic mapping as part of the baseline assessment. This noted that relatively large areas of the northern and southern ends of the Study Area had been subject to disturbance as a result of 19th and 20th century industrial activities and mining.

7.5.102 The review identified a number of new assets, most of which are associated with the post-medieval and modern development of settlements and industrial activities in the Study Area. These are discussed in the baseline text above, and are also listed in Appendix 7.1.

Future Baseline

7.5.103 Based on current knowledge, the future baseline is unlikely to change in the absence of the Project. Changes may occur as a result of other developments which could result in physical impacts, as well as impacts resulting from changes to the setting of assets.

7.5.104 Land use within the Study Area is likely to remain the same, and as such there is the potential for some degradation of buried archaeological remains in areas of arable cultivation.

7.5.105 Climate change could result in impacts to cultural heritage through aspects such as erosion resulting from extreme weather events. However, the extent to which this could occur is unknown.

Archaeological Potential

7.5.106 The review of baseline conditions has noted that the landscape of the XX Route and Study Area has been exploited from the prehistoric period onwards; however, it has also demonstrated that quite large areas have been impacts by post-medieval activity. This includes areas of coal mining, clay extraction/brick works, opencast mining and residential development. Other areas have also been impacted by the post-war intensification of arable cultivation, while sections of the central area comprise land that has been marginal or on the fringes of blanket bog.

7.5.107 Gazetteer 7.3 provides an overview of the XX Route and highlights areas of previous disturbance which are considered to have no/negligible archaeological potential.

7.5.108 Prehistoric evidence has been recorded throughout the Study Area, and the varying landscape would have represented a suitable area for exploitation for early hunter gatherers as well as the more sedentary peoples of the Bronze Age and Iron Age. As such, there is considered to be medium potential for previously unrecorded assets dating to the prehistoric period. Any previously unrecorded assets are likely to be of local importance, and therefore of Low Value (sensitivity).

7.5.109 There is very little evidence for Roman activity within the XX Route Study Area, with the main focus of activity being further north along the Antonine Wall. As such, the potential

for previously recorded assets dating to the Roman period is considered to be low. Any previously recorded assets are likely to be of regional importance, due to possible associations with Roman activity south of the Antonine Wall, as well as earlier Roman incursions into Scotland. As such, any new assets would be considered to be of Medium Value (sensitivity).

7.5.110 From the medieval period onwards, it is assumed that the landscape of the XX Route Study Area was largely agricultural, with the main settlements outside of the Study Area. Furthermore, mapping from the 19th century onwards provides good evidence of land use and demonstrates that most of the XX Route passes through agricultural land. As such, the potential for previously unrecorded assets dating to the medieval and post-medieval period is considered to be negligible. Any previously unrecorded assets are likely to be of local importance, and therefore of Low Value (sensitivity).

XR Route

Geology, Topography, and Land Use

7.5.111 The XR route is approximately 16 km in length, extending from Newarthill Substation in the north (NGR NS 78188 607728) to Wishaw Substation in the south (NGR NS 79105 54005) (see Figure 7.6). It is routed in a broadly eastern direction from Newarthill Substation towards the settlement of Shotts from where it heads south between Bonkle and Allanton. The landscape in this area is predominantly pastoral farmland, until it reaches the vicinity of the Muiredge and Jersey Road where the land becomes boggier, interspersed with rough pasture and forestry plantations. It is then routed in a western / southwestern direction to the south of Newmains and Wishaw before terminating at Wishaw Substation. In the latter part of the route the quality of soils improve, and pastoral farmland becomes more predominant.

7.5.112 The bedrock geology across the XR Route mostly comprises of Scottish Middle Coal Measures Formation, formed between 318 and 315.2 million years ago during the Carboniferous period. An area of the XR Route, approximately 985 m wide around Allanton Road (A71), comprises of passage formation bedrock geology of the Clackmannan Group, formed between 328 and 318 million years ago during the Carboniferous period.

7.5.113 Superficial deposits of Devensian Till, formed between 116 and 11.8 thousand years ago during the Quaternary period, covers the majority of the area. Areas of peat superficial deposit, formed between 2.588 million years ago and the present during the Quaternary period, are located in the High Street (B7066) and Hareshaw Moss parts of the XR Route. There are also areas of Glaciofluvial Deposits which comprised of gravel, sand and silt, formed between 2.588 million years ago and the present during the Quaternary period, located around Allanton Road (A71). At the most southern end of the XR Route, at Wishaw Substation, the superficial deposits comprise of Glaciolacustrine Deposits which consists of clay, silt and sand, formed between 2.588 million and 11.8 thousand years ago during the Quaternary period.

7.5.114 The majority of the Site is located between 132 m and 185 m aOD and is currently used for agriculture, with arable agriculture dominating. The exception is the southern limits of the route where former industrial settlement (Wishaw) and railway lines predominate.

Designated Assets

7.5.115 There are two designated assets within the Study Area of the XR Route, both of which are listed buildings. These consist of the Category B listed Meikle Hareshaw (LB1276) and the Category C listed Allanton Well at Brucefield Farm, Allanton (LB6450).

Prehistoric – Palaeolithic to Bronze Age (40,000BC to 800BC)[54]

7.5.116 Scotland was inhabited by small groups of hunter-gatherers following the retreat of glacial ice sheets during the Mesolithic period from the mid- eighth millennia BC. This corresponds with the start of the Holocene and the onset of post-glacial conditions, around 10,000 years ago.[55] While no Mesolithic sites have been recorded within the XR Route Study Area, lithics have been recorded at Woodend Loch, at the western end of the XX Route[56], and it is likely that the landscape of the XR Route would have been exploited during this period.

7.5.117 The Neolithic period marked a significant cultural shift to a settled agricultural lifestyle, replacing the earlier hunter-gatherer groups. There has been limited archaeological field surveys and fieldwork along the XR Route, meaning that there is a lack of Neolithic evidence recorded, although it is assumed that the landscape of the XR Route would have been exploited during this period. This lack of evidence continues into the Bronze Age with no assets recorded within the Study Area, although this again is assumed to be the result of a lack of archaeological fieldwork.

7.5.118 There are no assets recorded within the XR Route or Study Area on the NRHE from the prehistoric period.

Iron Age and Roman (800BC to AD400)

7.5.119 Evidence for activity during the Iron Age and Roman periods remains limited, with only a single non-designated historic environment asset recorded. This is the route of a possible Roman road (241934), see below.

7.5.120 The Iron Age in Scotland lasted from around 800 BC to AD 400. The start of the Iron Age is marked by the introduction of iron-working technologies. People in Britain made metals from the Bronze Age onwards, but iron is harder and more durable than bronze, and more difficult to make; the Iron Age heralded a new era of metal-working technology.[57]

7.5.121 There are no assets recorded on the NRHE relating to the Iron Age period within the XR Route or wider Study Area.

7.5.122 Roman campaigns in Scotland, led by Cerialis and Agricol,a began around AD 70, although these advances into northern Scotland were relatively short lived, and it was not until the mid-second century that the Romans advanced north again[58]. This later incursion

[54] Due to the varied nature of the Scottish landscape, and the resulting variations in settlement/land use, there is no agreed chronology at a national level. As such, the dates that have been assigned to the various periods for the baseline study are those set out in the Scottish Archaeological Research Framework (ScARF) available at Panel Reports Chronology and Downloads | The Scottish Archaeological Research Framework.
[55] Nyree Finlay (2014) The Mesolithic, available online: https://scarf.scot/wp-content/uploads/sites/15/2022/04/02_Mesolithic-002.pdf
[56] Finlay, N. (2014) 'The Mesolithic', available at 02_Mesolithic-002.pdf, accessed 24th November 2025.
[57] AOC archaeology group, available online: https://www.aocarchaeology.com/callanderslandscape/iron-age#:~:text=The%20Iron%20Age,era%20of%20metal%2Dworking%20technology.
[58] Trimontium Museums (2025) available online: https://www.trimontium.co.uk/learning/heritage/roman-scotland/#:~:text=Roman%20records%20refer%20to%20a,building%20of%20the%20Antonine%20Wall.

resulted in the construction of the Antonine Wall, approximately 16km to the north of the Study Area. During this period the landscape of the XR Route would have fallen under Roman control, although assets dating to the Roman period are limited to a possible Roman road (241934). This road runs from Belstane to Castlecary, approximately 219 m from the XR Route, and is still followed by the contemporary road system in places. However, due to the modern truncation it is unlikely that any of the Roman road remains within the modern road corridor, although traces might survive in the fields adjacent to the road.

Medieval (AD400 to AD1500)

7.5.123 The XR Route is within central Scotland within an area of agricultural activity. Despite the lack of excavations, it is concluded by Piers Dixon (2003) that the medieval settlement pattern of lowland Scotland was a mixture of large and small row villages, moated manors and granges.[59] As Strat Halliday (2003) describes, ridge and furrow cultivation was a traditional feature of the landscape.[60]

7.5.124 There are various examples of ridge of furrow, which are indicative of the agricultural land use of the Study Area within this time period. These include the Newark Plantation (86242), approximately 210 m from the XR Route. Morningside (138050), located 91 m from the Site and recorded during a field survey carried out by Scotia Archaeology Ltd in 1997. Another possible area of ridge and furrow was observed west of Muirhouse Farm (AECOM037), approximately 97 m from the XR Route, whilst a further example was observed on LiDAR, located 206 m from the XR Route (AECOM038). Finally, a large and extensive former field system with ridge and furrow was identified on LiDAR within the XR Route (AECOM039).

Post-Medieval (AD1500 to AD1900)

7.5.125 A total of 34 assets dating to the post-medieval period were identified within the Study Area, consisting of two listed building and 24 non-designated assets. Of these assets nine fall within the XR Route.

7.5.126 Early County Surveys of the XR Route provide limited information regarding land use due to their scale. However, they show a rough settlement pattern that mirrors the modern settlement pattern with a focus on the lower lying areas near the River Clyde to the west and southwest.

7.5.127 The first detailed survey of the XR Route is the General Roy Survey, dating to the mid-18th century[61]. This shows the land use and settlement pattern largely corresponding to that which survives in the contemporary landscape, with nucleated farmsteads within an agricultural landscape dominated by arable cultivation. Only limited areas are depicted as

[59] Historic Scotland (2003), Medieval or later rural in Scotland: 10 years on, P.63 available online https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=83f2d554-5ba1-4bbe-a7a8-a5aa00e85f81
[60] Historic Scotland (2003), Medieval or later rural in Scotland: 10 years on, P. 77 available online https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=83f2d554-5ba1-4bbe-a7a8-a5aa00e85f81
[61] General Roy Survey available at Georeferenced Maps viewer - Map images - National Library of Scotland, accessed 22nd November 2025.

pasture/semi-improved land or moss/moor, and areas of moss include the land south of Greenhead, where Greenhead Moss is located, near the southern end of the XR Route.

7.5.128 The first detailed map of the northern end of the XR Route, dating to 1843 to 1882 (1859, Ordnance Survey, Sheet XII, scale six inches to one statute mile, published by Colonel Sir H James, 1864), depicts the majority of the XR Route as agricultural fields. The first detailed map of the southern end of the XR Route was surveyed in 1842 to 1882 (OS) (1859, area of Cambusnethan, Sheet XVIII, scale six inches to one statute mile, published by Colonel Sir H James, 1864). This map depicts the area as a mix of agricultural fields, forests and the village of Wishaw with the railway layout being the same as present. There are also several coal pits depicted, including Royal George old coal pit (AECOM008), coal and Iron stone pit (AECOM005), old coal pit (AECOM006), old coal pit (AECOM007) and coal pit (AECOM009), which do not appear on HER or NRHE searches.

7.5.129 By the second survey of 1898 (OS) (1896, Second Edition 1898, Sheet XVIII.N.E, scale six inches to one statute mile, published by Ordnance Survey office, Southampton, 1898), the southern end of the route remained largely as agricultural fields, with areas of forest and arable land, such as Greenhead Moss. The village of Wishaw has expanded as well as evidence of industrialisation such as iron and steel works and associated reservoirs (AECOM010) along the railway. The northern end of the XR Route, second survey of 1899 (OS) (1896, Second Edition 1899, Northeastern Division, Sheet XII.N.E, Scale six inches to one statute mile, published by Ordnance Survey Office, Southampton, 1899), remained the same as on previous mapping. There is some evidence of previous industry depicted, including a disused quarry (305576).

7.5.130 Allanton House (199572) and Allanton Well (228024), with Category C listed building (LB6450), dates to 1813 and is located 142 m from the XR Route. The well is a small semicircular wellhead, with half hemispherical head. The house is of ashlar sandstone with vermiculated front faces. It has the remains of lion mask pipe inset, with a semicircular plaque above, bearing a Latin inscription. Associated with Allanton House are a lodge (AECOM043), depicted on the First Edition Ordnance Survey mapping (Lanarkshire XIII.9, surveyed 1859, published 1860), and the Second Edition OS mapping (Lanarkshire XIII.9, surveyed 1896), as well as parkland (AECOM044). The lodge has since been demolished.

7.5.131 Another listed building dating to the post-medieval period is the Category B listed Meikle Hareshaw (LB331795), located within the XR Route. It comprises of a single storey, 3-bay farmhouse with U-plan steading.

7.5.132 There are a series of agricultural buildings which are depicted in the 1st edition OS map but then do not appear on later mapping (the 1981 OS Map) suggesting they have since been demolished. These include a farmstead recorded on the NRHE as Brackenfoot (179858), located 126 m from the XR Route, comprising two roofed buildings, one unroofed building and two enclosures; located within the XR Route at Mill Road, Crosshill (179857), is a single unroofed building; situated in the village of Hareshaw, approximately 145 m from the XR Route (179785), is a single unroofed building; one roofed and one unroofed building (179824), located in Morningside approximately 181 m from the XR Route; finally, a farmstead, comprising three roofed buildings and one unroofed building located at Waterloo, Burnhall Pace (179874), approximately 37 m from the XR Route is not shown on

the OS map of 1986. As all of these assets are depicted on the 1st edition OS map, it is not clear when they were first constructed.

7.5.133 There is also a record of a farmstead (179792), which comprised of two roofed buildings, and one unroofed building, depicted on the 1st edition OS map. This later expanded to six roofed buildings on the OS Edition on 1991.

7.5.134 Similarly, there were examples of agricultural buildings present on the historical mapping which were not recorded on the NRHE such as The Tree (AECOM036), located 58 m from the XR Route, was first shown on the 1st Edition OS map as a farmhouse, with a coal and iron stone pit adjacent (Lanarkshire VII.7, surveyed 1859, published 1860). However, by the 2nd Edition OS map, only the farmhouse is depicted. Another farmhouse, with an associated building labelled on the 1st Edition OS map (Lanarkshire XIII.5, surveyed 1859, published 1860) as Amosknowes (AECOM040), was located 27 m from the ZR Route. This has, however, since been demolished.

7.5.135 There are two sheepfolds within the XR Route recorded on historical mapping. The first sheepfold (AECOM041) was first depicted on the 1st Edition OS map (Lanarkshire XIII.9, surveyed 1859, published 1860), whilst the second (AECOM042) was depicted on the 2nd Edition OS map.

7.5.136 The assets described above show that the area surrounding the XR Route was largely agricultural until the later post-medieval period. Examples of industry include Brownhill Farm Steading (82226) which is marked as a former quarry on the 1st edition OS map and is 62 m from the XR Route. Another quarry (85912) is located 225 m from the XR Route and comprises a complex of grass-grown interconnected quarry-pits. The exploitation of natural resources, primarily coal, is also evident with a number of collieries recorded on the OS maps. These include Greenhill Colliery (82225), which was operational between 1873 until 1964, depicted on the 2nd Edition OS map as two pits together with a brickworks and a smithy; Chapel Colliery (AECOM045), located 35 m from the XR Route, also depicted on the 1st Edition map (Lanarkshire XIX.1, surveyed 1859, published 1860), and greatly expanded by the 2nd Edition OS map (Lanarkshire XVIII.4, surveyed 1896, published 1897).

7.5.137 Due to the increase in industry, there was also a rise in population resulting in the expansion of settlements. This growth was also coupled with the construction of public buildings, such as a schoolhouse (317073), dating to the 19th century, located on 324 Morningside Road, approximately 181 m from the XR Route.

7.5.138 There is a single record on the NRHE relating to previous archaeological investigations carried out at Pather Farm, Wishaw (200882), located 208 m from the XR Route. The evaluation identified a sandstone wall foundation from a late 18th to early 19th century farm building which had been demolished to ground level.

Modern (AD1900 to Present)

7.5.139 A total of eight assets dating to the modern period were identified within the Study Area, all of which are non-designated assets. Of these assets two assets fall within the XR Route.

7.5.140 By the survey of 1910 (OS) (1910, Edition of 1913, Sheet XVIII.N.E, scale six inches to one statute mile, published by the Ordnance Survey Office, Southampton, 1913), within the Study Area, the village of Wishaw has expanded with the addition of terrace housing and a railway carriage wagon and wheel works (200893), likely related to the Caledonian Railway. The northern end of the XR Route by the survey of 1910 (OS) (1910, Edition of 1913, northeastern division, Sheet XII.N.E, scale six inches to one statute mile, published by Ordnance Survey Office, Southampton, 1913) was principally agricultural land, although there is evidence of previous industry, including the Woodhall Brick Works (AECOM016), an old shaft (AECOM017) and an old quarry (AECOM018).

7.5.141 By the survey conducted in 1892 to 1960 (OS) (1940, revision of 1910 with additions in 1938 and 1940, Sheet XVIII.N.E, scale six inches to one statute mile, published by the Director General at the Ordnance Survey Office, 1949) the southern end of the XR route shows a further increase of urbanisation within the Study Area, as the village of Wishaw expanded with more terrace housing. At the northern end of the route on the 1938 (OS) (1938, revision of 1910 with additions in 1938, Sheet XVIII.N.E, scale six inches to one statute mile, director general at the Ordnance Survey Office, 1947) there was very little change to earlier mapping, the area mainly appearing as agricultural field systems and land.

7.5.142 There are three assets dating to the modern period that are war monuments. These include a 20th century War Memorial on Morningside Road, approximately 77 m from XR route (340633); a War Memorial on Waterloo, Wishaw Road (340634), located 95 m from the XR route; and a War Memorial on Overtown Road (340635), approximately 198 m from the XR route.

Site Visit

7.5.143 A Site Visit was undertaken between the 3rd to the 7th of November 2025. The purpose of this visit was to view the existing overhead line in the landscape, and look for situations where moving towers, or increasing the height of towers, may result in significant impacts on heritage assets. Weather conditions varied from overcast with low cloud and heavy rain showers, but in general the conditions allowed good views of the landscape.

7.5.144 The Site visit also involved examining the access track works. It was, however, noted that in most areas access tracks will be constructed using non-intrusive methods thereby removing the potential for impacts.

7.5.145 No new assets were recorded as part of the walkover survey, and none of the bell mouths are situated on the line of stone walls, but rather on hedge lines with no historical value.

LiDAR and Aerial Photographic Review

7.5.146 A review of LiDAR data and aerial photographs was also undertaken alongside the review of historic mapping as part of the baseline assessment. This noted that relatively large areas of the northern and southern ends of the Study Area had been subject to disturbance as a result of 19th and 20th century industrial activities and mining.

7.5.147 The review identified a number of new assets, most of which are associated with the post-medieval and modern development of settlements and industrial activities in the Study Area. These are discussed in the baseline text above and are also listed in Appendix 7.1.

Previous Archaeological Investigations

7.5.148 A desk-based study and field survey, carried out by Scotia Archaeology Ltd, in advance of proposed mineral extraction near the village of Morningside.

7.5.149 A watching brief was conducted by Headland Archaeology Ltd on a parcel of land believed to have been undisturbed by previous quarrying, located 20 m from the XR Route. Despite this initial interpretation the site appears to have been previously excavated and subsequently backfilled with 20th-century waste material, such as crushed brick and ash.

Future Baseline

7.5.150 Based on current knowledge, the future baseline is unlikely to change in the absence of the Project. Changes may occur as a result of other developments which could result in physical impacts, as well as impacts resulting from changes to the setting of assets.

7.5.151 Land use within the Study Area is likely to remain the same, and as such there is the potential for some degradation of buried archaeological remains in areas of arable cultivation.

7.5.152 Climate change could result in impacts to cultural heritage through aspects such as erosion resulting from extreme weather events. However, the extent to which this could occur is unknown.

Archaeological Potential

7.5.153 The XR Route contains no archaeological assets predating the 19th century recorded on the NRHE, and it would appear that the Site has been largely used for agriculture until it was developed with collieries and iron pits. The Site walkover did not identify any features of potential heritage interest within the Site. Therefore, the potential for archaeological remains dating to all periods within the XR Route is assessed as low. Any previously unrecorded assets are likely to be of local importance, and therefore of Low Value (sensitivity).

Embedded Mitigation Measures for all reconductoring works

7.5.154 All designated assets have been avoided by the works proposed as part of the upgrades of the ZG Route, XX Route, and XR Route.

7.5.155 Where possible, the Project, including all access tracks, has also been designed to avoid previously recorded non-designated heritage assets, thereby avoiding the potential for physical impacts.

Assessment of Effects

Construction Phase

7.5.156 The construction phase of the ZG Route, XX Route, and XR Route has the potential to result in the following impacts:

- Permanent physical impacts on previously recorded heritage assets due to the construction of tower foundation upgrades and access track works; and
- Permanent physical impacts on previously unrecorded heritage assets due to construction of tower foundation upgrades and access track works.

7.5.157 Potential impacts resulting from the construction phase are discussed by route below.

ZG Route

7.5.158 A single non-designated asset is recorded within the ZG Route. The non-designated asset is not located near any proposed works, such as tower foundation upgrades or access track works. As such, based on the design there are no impacts on this asset predicted, and, as a result, this asset has not been taken forward to full assessment (see Table 7-11).

Table 7-11: Assets within the ZG Route Site that have been scoped out of the assessment

Asset ID	Asset Name	Reason Scoped Out
278973	Dunipace, Weir: Weir (Period Unassigned)	Dunipace Weir is located within the River Carron and outside of any below ground works with the nearest tower on the south bank of the river, 32 m from the asset.

7.5.159 As noted in the 'Archaeological Potential Section' above, the archaeological potential for all periods is considered to be low or negligible due to aspects such as the marginal nature of the landscape, the lack of previously recorded assets, and previous ground disturbance. The value of any previously recorded assets that might be identified is assumed to be medium for the Roman period, and low for all other periods.

7.5.160 A worst-case scenario has been adopted for the assessment of potential impacts on previously unrecorded assets, and, as a result, it is assumed that the Project could result in the total loss of previously unrecorded assets of medium value. This would result in a Major Adverse Significance of Effect. However, it should be noted that the potential for identifying previously recorded assets is considered to be low, and there is potential that assets could be avoided, either fully or partially, and therefore significant effects are highly unlikely to occur.

Summary of Significant Effects ZG Route

7.5.161 Based on the assessment, no significant effects are likely to result from the reconductoring of the ZG Route.

XX Route

7.5.162 There are no designated assets and 16 non-designated assets recorded within XX Route . A number of these are findspots and as such represent assets that are no longer existing *in situ*, while a number of other assets have been recorded through documentary sources and accurate grid references are not known. Furthermore, the majority of the remaining assets are not located near any proposed works, such as tower foundation upgrades or access track works, or have been avoided. As such, based on the current design there are no impacts on these assets predicted, and, as a result, these assets have not been taken forward to full assessment (see Table 7-12).

Table 7-12: Assets within the XX Route Site that have been scoped out of the assessment

Asset ID	Asset Name	Reason Scoped Out
132387	Knowehead No. 2 Mine: Colliery (Period Unassigned)	Within the redline boundary but no below ground works taking place, nearest tower 100 m
135934	Burnlip, Limekiln: Lime Kiln (Period Unassigned)	Within the redline boundary but no below ground works taking place, nearest tower 35 m
135937	Gartverrie: Farmstead (Period Unassigned)	Within an area of woodland, with the nearest area of below ground works being a tower located 85 m from the asset.
165068	Wester Moffat: Colliery (Period Unassigned)	With a tarmac area, with the nearest area of below ground works being a tower located 45 m from the asset.
165069	Wester Moffat: Colliery (Period Unassigned)	With a tarmac area, with the nearest area of below ground works being a tower located 45 m from the asset.
179797	Burn Wood: Farmstead (Period Unassigned)	Asset in area of later industrial activities (a large distillery) and all remains have been removed. Furthermore, works in this area will be non-intrusive.
362629	Airdrie, Old Coal Pit: Coal Mining Site (Post-Medieval)	On the outskirts of dense woodland, with the nearest area of below ground works located 115 m from the asset being a tower.
AECOM022	Possible area of ridge and furrow northwest of Woodend Farm. Visible on LiDAR.	The nearest area of below ground works in located 25 m from the asset.
AECOM025	Linear feature visible on LiDAR. Check as might be large, buried utility.	Feature assumed to be a buried utility and not archaeological.
AECOM027	Curling pond. Shown on the First and Second Ordnance Survey mapping of the area, but later removed by large-scale quarrying. No longer surviving.	Located 40 m from nearest area of below ground works that being a tower. In an area of undulating ground.
AECOM029	Old shaft. Not shown on the First Edition Ordnance Survey mapping, but marked as 'old' on the Second Edition Ordnance Survey mapping (Lanarkshire VIII.11, surveyed 1897, published 1898).	Located 105 m from the nearest tower and below ground works.

Asset ID	Asset Name	Reason Scoped Out
AECOM032	Glenhead. Depicted on the First Edition Ordnance Survey mapping (Lanarkshire VIII.11, surveyed 1859, published 1860) and the Second Edition Survey (Lanarkshire VIII.11, surveyed 1897, published 1898), but now demolished.	Located 45 m from nearest tower and below ground works.

7.5.163 The remaining assets are recorded within the XX Route, or close to proposed works which may involve ground disturbance including (but not limited to) stripping of topsoil for the new temporary access tracks or upgrading the foundations of existing towers, as well as compounds and laydown areas (Table 7-13). As a result, these have been taken forward to assessment.

Table 7-13: Assets within the XX Route Site that have been scoped into the assessment

Asset ID	Asset Name	Period	X	Y
362630	Airdrie, Thrushbush Pit: Coal Mining Site (Post-Medieval)	Post-Medieval	276701	667286
AECOM 019	Gartsherrie Colliery. Former colliery consisting of Pit No. 1 and Pit No.2, as well as associated structures and railway sidings Second Edition OS mapping (Lanarkshire VII.7, surveyed 1897). Now demolished, although traces evident on LiDAR surveys.	Post-Medieval	270845	667241
AECOM 023	An area of ridge ad furrow has been recorded on LiDAR data to the south of Gartliston Farm.	Unknown	272765	667608
AECOM 034	Possible area of ridge and furrow north of Gartness Farm. Visible on LiDAR.	Medieval-Post-Medieval	279080	663789
AECOM 028	Site of Burnhead Quarry. Recorded on the First Edition	Unknown	278051	666494

Asset ID	Asset Name	Period	X	Y
	Ordnance Survey mapping (Lanarkshire VIII.6, surveyed 1858, published 1860), and much expanded by the Second Edition OS mapping.			
N/A	Previously unrecorded assets	Various	N/A	N/A

Airdrie, Thrushbush Pit, (362630)

7.5.164 The site of the former Thrushbush Pit, Airdrie, was first recorded on the First Edition Ordnance Survey mapping of the area. By the time of the Second Edition Ordnance Survey mapping, the colliery appears to have stopped operating with surviving features limited to an 'old shaft' to the northwest, and a section of former track/wagonway to the north and spoil tips to the south. No surface remains of the colliery survive within the Site, and the area appears to have been subject to further disturbance associated with the construction of housing immediately to the south. Any remains that might survive as buried features may have archaeological and historical interest from the information they could hold about the industrial development of the region during the 19th century. The assets are considered to be of negligible value (sensitivity) due to being of a form common in this part of Scotland, and as a result of their apparent poor preservation.

7.5.165 Part of the former pit is located within the vicinity of Tower XX025 and the works compound that would be associated with works to upgrade the Tower. As such, stripping for the compound has the potential to impact on any remains that might survive as buried features. However, there are no visible remains of the colliery remaining, and the area appears to have been disturbed by later residential development. Furthermore, the size of the former colliery means that only a limited area would be impacted, if remains were found to survive. As a result the magnitude of change is considered to be low. On an asset of negligible value, this would result in a **negligible significance** of effect. This is not significant in EIA terms.

Gartsherrie Colliery, AECOM019

7.5.166 The former Gartsherrie Colliery site, consisting of Pit No. 1 and Pit No.2, was identified from a review of historic mapping. The complex originally covered an extensive area, with most of the site to the south of the XX Route; however, remains within the Site included the area of Pit. No. 2. No traces of the colliery now survive as above ground remains, and LiDAR data also suggests that large areas around the existing tower (Tower XX003) has been disturbed or levelled, although remains may also survive as buried features. Any remains that might survive as buried features may have archaeological and historical interest from the information they could provide about the industrial development of the region during the 19th century. The asset is considered to be of negligible value (sensitivity) due to being of a form common in this part of Scotland, and as a result of their poor preservation.

7.5.167 Based on a review of historic mapping, the northern elements of the colliery, including Pit No. 2, are located to the west of Tower XX003. Works in this area include stripping for a compound in the area of Tower XX003, which would have the potential to have physical impacts on any buried remains that might survive. However, the potential for remains to survive is expected to be limited. Furthermore, any impacts would be limited to a very small part of the former colliery complex. As a result, the magnitude of change is considered to be low. On an asset of negligible value, this would result in a **negligible significance** of effect. This is not significant in EIA terms.

Ridge and furrow (AECOM23)

7.5.168 An area of ridge ad furrow has been recorded on LiDAR data to the south of Gartliston Farm. The straight nature of the earthworks suggests the ridge and furrow is post-medieval in date, and the LiDAR data also suggests that the earthworks in the area around Tower XX010 have been levelled – possibly as a result of the construction of the existing tower. The earthworks have archaeological and historical interest from the information they could provide about the agricultural development of the region during the post-medieval period. The asset is considered to be of low value (sensitivity).

7.5.169 The ridge and furrow is located in the same field as Tower XX010, although it appears to have been largely levelled in the area of the tower. There is the potential for physical impacts on the earthworks resulting from stripping for the compound around Tower XX010; however, these will be limited to a small area of the earthworks, and will also be in an area that has been previously disturbed. As a result, the magnitude of change is considered to be low which on an asset of low value would result in a **negligible significance** of effect. This is not significant in EIA terms.

Ridge and furrow, AECOM034

7.5.170 An area of ridge and furrow has been recorded on LiDAR data to the south of Glenhead. The straight nature of the earthworks would suggest the ridge and furrow is post-medieval in date, and the LiDAR data also suggests that the earthworks in the area around Tower XX039 have been levelled – possibly as a result of the construction of the existing tower. The earthworks have archaeological and historical interest from the information they could provide about the agricultural development of the region during the post-medieval period. The asset is considered to be of low value (sensitivity).

7.5.171 The ridge and furrow is located in the same field as Tower XX039, although it appears to have been largely levelled in the area of the tower. There is the potential for physical impacts on the earthworks resulting from stripping for the compound around Tower XX039; however, these will be limited to a small area of the earthworks, and will also be in an area that has been previously disturbed. As a result, the magnitude of change is considered to be low which on an asset of low value would result in a **negligible significance** of effect. This is not significant in EIA terms.

Site of Burnhead Quarry (AECOM028)

7.5.172 The site of the former Burnhead Quarry has been recorded on historic mapping since the first edition Ordnance Survey mapping of the area published in 1860, although the quarry is no longer in use. It has historic interest associated with the post-medieval industrial activities, including the role the quarry had in providing sandstone for local construction. It

is, however, a type of asset common in the area, and as such is considered to be of low value.

7.5.173 Works in the area of the asset are limited to a trackway in the southern limit of the former quarry, although this will be constructed with track matting and therefore will have a minimal impact on the asset. Works on the compound around Tower XX030 will also be limited to the land to the east of the former quarry. As a result, the magnitude of change is considered to be negligible which on an asset of low value would result in a **negligible significance** of effect. This is not significant in EIA terms.

Previously Unrecorded Heritage Assets

7.5.1 As noted in the 'Archaeological Potential Section' above, the archaeological potential for all periods is considered to be low or negligible due to aspects such as the marginal nature of the landscape, the lack of previously recorded assets, and previous ground disturbance. The value of any previously recorded assets that might be identified is assumed to be medium for the Roman period, and low for all other periods.

7.5.2 A worst-case scenario has been adopted for the assessment of potential impacts on previously unrecorded assets, and, as a result, it is assumed that the Project could result in the total loss of previously unrecorded assets of medium value. This would result in a Major Adverse Significance of Effect. However, it should be noted that the potential for identifying previously recorded assets is considered to be low, and there is potential that assets could be avoided, either fully or partially, and therefore significant effects are highly unlikely to occur.

Summary of Significant Effects XX Route

7.5.3 There are no heritage assets that would experience significant effects from the reconductoring of the XX Route.

XR Route

7.5.4 There is one designated asset (listed building) and 12 non-designated assets recorded within the XR Route. A number of these are findspots and as such represent assets that are no longer existing *in situ*, while a number of other assets have been recorded through documentary sources and accurate grid references are not known. Furthermore, the majority of the remaining assets are not located near any proposed works, such as tower foundation upgrades or access track works, or have been avoided. As such, based on the current design there are no impacts on these assets predicted, and, as a result, these assets have not been taken forward to full assessment (see Table 7-14).

Table 7-14: Assets within the XX Route Site that have been scoped out of the assessment

Receptor ID	Receptor Name	Reason Scoped Out
LB1276	Meikle Hareshaw	While the listed building is located within the Site, it is at least 30m from the nearest works (a track), and it is separated from the works by farm buildings and a

Receptor ID	Receptor Name	Reason Scoped Out
		stockyard. As such, no physical impacts are predicted.
139891	Chapel: Building(S) (Period Unassigned)	Located 90 m from any proposed works and nearest tower.
179857	Mill Road, Crosshill: Building (Period Unassigned)	Located 120 m from the nearest tower and any proposed below ground works.
287857	Hartwood, Foulburn Road, Foulburn: Farmstead (Period Unassigned)	Located 55 m from the nearest tower and any proposed below ground works. Surrounded by forest to the west.
AECOM007	Old coal pit depicted on historical mapping 1859, area of new Monkland, Sheet VIII, scale six inches to one statute mile, published by Colonel Sir H James, 1864	Located on the edge of the redline boundary, approximately 165 m from the nearest tower and within an area of no below ground works.
AECOM017	Old shaft 1910, Edition of 1913, northeastern division, Sheet XII.N.E, scale six inches to one statute mile, published by Ordnance Survey Office, Southampton, 1913	Located outside of the main red line boundary and any below ground works and approximately 55 m from the nearest tower.
AECOM041	Sheepfold. Appears to be part of parkland associated with Allanton House. Depicted on the First Edition Ordnance Survey mapping but not named (Lanarkshire XIII.9, surveyed 1859, published 1860), however, named as a sheepfold on the Second Edition OS mapping	Located 175 m from the nearest tower and any proposed below ground works.
AECOM042	Sheepfold. Appears to be part of parkland associated with Allanton House. Not depicted on the First Edition Ordnance Survey mapping (Lanarkshire XIII.9, surveyed 1859, published 1860), however, named as a sheepfold on the Second Edition OS mapping (Lanarkshire XIII.9, surveyed 1896, published 1898). Not clear if surviving.	Located 40 m from nearest tower and any proposed below ground works.
AECOM043	Lodge. Appears to be part of parkland associated with Allanton House. Depicted on the First	Located 60 m from nearest tower and any proposed below ground works.

Receptor ID	Receptor Name	Reason Scoped Out
	Edition Ordnance Survey mapping (Lanarkshire XIII.9, surveyed 1859, published 1860), and the Second Edition OS mapping (Lanarkshire XIII.9, surveyed 1896, published 1860), and the Second Editon OS mapping (Lanarkshire XIII.9, surveyed 1896, published 1898). Not clear if surviving.	

7.5.5 The remaining assets are recorded within the XR Route, or close to proposed works which may involve ground disturbance including (but not limited to) stripping of topsoil for the new temporary access tracks or upgrading the foundations of existing towers, as well as compounds and laydown areas (Table 7-15). As a result, these assets have been taken forward to assessment.

Table 7-15: Assets within the XX Route Site that have been scoped into the assessment

Asset ID	Asset Name	Period	X	Y
82225	Greenhill Colliery: Brickworks (19th Century), Colliery (19th Century), Ironstone Mine (19th Century)	Post-Medieval	280900	660100
AECOM 039	Large area of ridge and furrow visible on LiDAR around View Strip. Large and extensive with former field system clearly visible.	Medieval-Post-Medieval	283197	659807
AECOM 044	Allanton Parkland. Area of parkland associated with Allanton House that has now been demolished	Post-Medieval	284451	657371
AECOM 045	Former Chapel Colliery site. Depicted on the First Edition Ordnance Survey mapping (Lanarkshire XIX.1, surveyed 1859, published 1860), and greatly expanded by	Post-Medieval	282982	654480

	the Second Edition Ordnance Survey mapping (Lanarkshire XVIII.4, surveyed 1896, published 1897).

Greenhill Colliery (82225)

7.5.6 The former Greenhill Colliery has been recorded from historic mapping, covering a relatively extensive area and consisting of pitheads, trackway, and other associated structures. A 'brick works' and 'Pit No. 12' are both located in the approximate area of Tower XR010, although no above ground remains survive, and LiDAR data suggests the site has been subject to disturbance. This is potentially as a result of the construction and operation of the colliery, as well as its decommissioning and subsequent reclamation. Any remains that might survive as buried features may have archaeological and historical interest from the information they could provide about the industrial development of the region during the 19th century. The asset is considered to be of low value (sensitivity) due to being of a form common in this part of Scotland, and as a result of its poor preservation.

7.5.7 Works in the area of the former colliery comprises of a compound around Tower XR010, with stripping having the potential to result in physical impacts on any features that survive as buried remains. The impacts would, however, be limited to a small area of the overall colliery site, and the area also appears to have been subject to previous disturbance resulting from the construction of Tower XR010. As such, the magnitude of change is considered to be low. On an asset of low value, this would result in a **negligible adverse effect**. This is not significant in EIA terms.

Large area of ridge and furrow (AECOM039)

7.5.8 An extensive area of ridge and furrow was identified as part of the LiDAR review within the area of the XR Route near Tower XR017. The features may have archaeological and historical interest from the information they could contain linked to the history of land use in the area, as well as the chronology of the site. Ridge and furrow cultivation represents a form of agriculture common within the Study Area during the medieval and post-medieval periods, with traces surviving as earthworks and cropmarks. As a result, it is considered to be of local importance, and therefore of low value.

7.5.9 The ridge and furrow is partially located within the footprint of an existing Tower (XR017). The proposed works are within the existing tower footprint and any physical impacts on buried remains that might survive are likely to be limited to a small element of the overall asset, and, as a result, the magnitude of change is considered to be low. On an asset of low value, this would result in a **negligible adverse effect**. This is not significant in EIA terms.

Allanton Parkland. Area of parkland associated with Allanton House (AECOM044)

7.5.10 The outline of the historic parkland associated with the now demolished Allanton House can be traced in the contemporary landscape. Historic mapping of the area shows that the character of the parkland has been changed with pockets of woodland planting removed, and the A71 road constructed through the middle of the parkland, on a roughly southwest

to northeast alignment, thereby severing the parkland, and significantly altering its appearance.

7.5.11 The remaining parkland may include features that survive as buried remains, and as such it is considered to have archaeological and historical interest from the information it could provide about designed landscapes during the post-medieval and modern periods. The asset is considered to be of low value (sensitivity) due to its poor preservation, including the loss of the house that was key to its formation, the removal of pockets of woodland, and the construction of the A71 which divides the parkland in the middle.

7.5.12 Three existing towers are located within the parkland (XR023-XR025), all of which have been placed on the edges of the parkland. The proposed works that have the potential to result in physical impacts within the parkland are limited to temporary access tracks, all of which are located in areas of pasture and most positioned away from known features recorded on historic mapping. The one exception is a section of access track located in the area of a sheepfold recorded on historic mapping, although this feature has been destroyed and no trace is visible on aerial photographs or LiDAR data. As such, impacts are assessed as a low magnitude of change. On an asset of low value, this would result in a **negligible adverse effect**. This is not significant in EIA terms.

Former Chapel Colliery site (AECOM045)

7.5.13 The former Chapel Colliery, identified during the analysis of historical mapping, is assessed as of low value, due to collieries being of local significance as places central to central Scotland's economy and society, powering industries and creating 150,000 jobs, while also shaping communities and leaving a lasting landscape legacy.

7.5.14 The former colliery is partially located within the footprint of two existing towers (XR036) and (XR037), therefore, it is likely that the remains of the former colliery within this area are heavily truncated. The proposed works are within the existing tower footprint and access road and this is likely to result in minimal impacts to any potential surviving elements of the former colliery. This is assessed as a low magnitude of change. On an asset of low value, this would result in a **negligible adverse effect**. This is not significant in EIA terms.

Operational Phase

7.5.15 Due to the nature of the Project, potential impacts resulting from the Operational Phase are limited to impacts on the setting of heritage assets. As the Project will not alter the appearance of the XR Route, no impacts on setting are predicted, and as such Operational impacts were scoped out at the Scoping Stage.

Summary of Significant Effects XR Route

7.5.16 There are no heritage assets that would experience significant effects from the Project within the XR Route.

Additional Mitigation Measures

7.5.17 In areas where heritage assets have been previously recorded and where stripping is required, mitigation in line with that detailed in Table 7-8 will be undertaken, subject to consultation with relevant stakeholders. This would consist of archaeological monitoring during the stripping of access tracks to allow any buried archaeological remains that might

survive to be recorded prior to construction. Based on the current findings, no areas of strip, map, and record or archaeological excavations are proposed, due to the limited intrusive works in areas of previously recorded heritage assets.

7.5.18 Based on the current design, all scheduled monuments will be avoided and there will be no impact upon them. If the design alters and temporary works are required that may affect any scheduled monuments, an application for SMC will be submitted which will include a detailed proposal for site specific mitigation.

7.5.19 All mitigation works will be agreed with the relevant Local Authority Archaeological Advisor, and HES in the case of designated assets, once full details of the construction works have been agreed and prior to works commencing.

Residual Effects

7.5.20 Table 7-16 provides a summary of pre-mitigation construction effects, mitigation measures, and residual effects that have been described within this section of this chapter relating to reconductoring. Significant effects typically comprise effects that are moderate or above.

Table 7-16: *Residual significance of effect after mitigation*

Asset ID/ Description	Scale of Effect	Mitigation	Residual Effect
82225 – Greenhill Colliery	Negligible	CH-1	Negligible
AECOM039 - Large area of ridge and furrow	Negligible	CH-1	Negligible
AECOM044 – Allanton Parkland	Negligible	CH-1	Negligible
AECOM045 - Former Chapel Colliery site.	Negligible	CH-1	Negligible

Monitoring

7.5.21 The requirement for archaeological monitoring would be agreed with Stakeholders as part of the mitigation strategy. This will be undertaken by an Archaeological Clerk of Works, and include work within the immediate environs of the WHS, as well as areas of previously recorded assets.

7.6 Assessment of Effects, Mitigation and Residual Effects of the CB Route Removal

Introduction

7.6.2 This chapter assesses the impacts and likely effects, on heritage assets of archaeological and cultural heritage interest, resulting from the Project removing a current overhead line (the CB Route). Baseline data was collected for the Site as well as a 250m Study Area in order to assess the archaeological potential of the Site, as well as examine the potential

for physical impacts. A wider 500m Study Area was used to identify effects resulting from changes to setting.

Baseline and Future Baseline Conditions

Geology, Topography, and Land Use

7.6.3 The decommissioning of the CB Route follows the existing CB overhead line, which runs from Cumbernauld Substation in the southwest (NGR NS 77513 74397) to Bonnybridge Substation in the northeast (NGR NS 84025 80871). The bedrock geology in the north consists of Passage Formation, formed between 328 and 318 million years ago during the Carboniferous period, with the superficial geology consisting of Raised Marine Devensian Clay, silt, sand and gravel, formed between 116 and 11.8 thousand years ago during the Quaternary period.

7.6.4 The solid geology of the southwestern area, near the settlement of Cumbernauld, is also Passage Formation, whilst the superficial deposits are dominated by Devensian Till, formed between 116 and 11.8 thousand years ago during the Quaternary period, with occasional areas of peat formed between 2.588 million years ago and the present.

Designated Assets

7.6.5 There are six designated assets within the Study Area of the CB Route. Part of this route is within the Antonine Wall WHS buffer (WHB1 and WH1), which includes two scheduled components. These are the Antonine Wall, Rough Castle Fort, Annexe and Military Way (SM90013), and the Antonine Wall, Rough Castle to Lime Road, and Field System (SM8244).

7.6.6 The remaining designated assets are Scheduled Monuments and include the Forth and Clyde Canal: Castlecary - M9 Motorway (SM6768), and Wester Carmuirs Ring Ditch Settlement 450m SSW of (SM6413).

Prehistoric – Palaeolithic to Bronze Age (40,000BC to 800BC)[62]

7.6.7 A single asset dating to the prehistoric period has been recorded within the CB Route Study Area. This is the Wester Carmuirs Ring Ditch Settlement 450m SSW of (SM6413), recorded through oblique aerial photographs. While dated to the prehistoric period, the form of this site would suggest it dates to the Iron Age period.

Iron Age and Roman (800BC to AD400)

7.6.8 The Iron Age (750 BC–AD 400) is often considered to be a well understood period of Scottish prehistory. Monuments include stone-built brochs and duns, in the north and west, while there are a large number of hilltop enclosures and forts in the south and east.[63]

7.6.9 Settlement activity within the Central Belt varies, with larger fortified structures such as duns and broches found in the upland areas, while enclosed settlements and field systems become more prevalent in the lower lying zones. This is a pattern which is also

[62] Due to the varied nature of the Scottish landscape, and the resulting variations in settlement/land use, there is no agreed chronology at a national level. As such, the dates that have been assigned to the various periods for the baseline study are those set out in the Scottish Archaeological Research Framework (ScARF) available at Panel Reports Chronology and Downloads | The Scottish Archaeological Research Framework.
[63] Derek Alexander (2015), The Iron Age, available online: https://scarf.scot/wp-content/uploads/sites/15/2022/04/05_IronAge.pdf

visible within the CB Route Study Area which varies from the low-lying land of the River Carron in the north, to the more elevated landscape of the south.

7.6.10 Assets dating to the Iron Age within the CB Route Study Area are limited, but include a single scheduled monument comprising a ring ditch recorded through oblique aerial photographs (SM6413).

7.6.11 When the Roman army made their first incursions into west central Scotland it appears to have been into a largely deforested landscape of cultivated land (Tipping 1994). The nature of the Roman contact and its cultural impact needs to be re-examined carefully. It is clear that Roman goods, notably Samian Ware, were used on a number of native sites; though through what process these artefacts, mostly vessels, were acquired remains unclear. They may have been exchanged for goods at Roman forts and/or redistributed from key native settlements by elites. In west Scotland Roman artefacts have been found on native sites at Hyndford Crannog, Gallowflat and Cadzow.[64]

7.6.12 A total of five assets dating to the Roman period were identified within the Study Area, consisting of two Scheduled Monument and one non-designated assets. Of these assets three fall within the CB Route.

7.6.13 The CB Route lies within the Antonine Wall WHS Boundary and WHS buffer. Therefore, there is a concentration of Roman activity along the route, such as the Fort at Rough Castle (SM90013), which is one of the best-preserved of all the Antonine Wall forts, with the ramparts and ditches of the fort and its eastern annexe surviving in good condition. Moreover, the remains of a system of turf banks and enclosures which lie to the south of Rough Castle are also scheduled and within 46m of the Study Area (SM8244).

7.6.14 There is a non-designated heritage asset, related to Roman occupation within the wider Study Area, comprising of a short length of stone kerbing, reminiscent of Roman work, visible from Crow Bank Farm (46805), located 206 m from the CB Route.

Medieval (AD400 to AD1500)

A single asset is recorded in the Study Area of the CB Route. This is comprised of ridge and furrow, captured by aerial photographs (286486, RCAHMSAP 2006) on the hillside to the south-east of Lochgreen, approximately 136 m from the CB Route.

Post-Medieval (AD1500 to AD1900)

7.6.15 A total of ten assets dating to the post-medieval period were identified within the Study Area, consisting of one Scheduled Monument and nine non-designated assets. Of these assets three fall within the CB Route.

7.6.16 Early County Surveys of the CB Route Study Area provide limited information regarding land use due to their scale. However, they show a rough settlement pattern that largely mirrors the modern day, with a focus on the lower lying areas along the River Carron valley to the north, as well as the River Kelvin to the west.

[64] Derek Alexander (2015), The Iron Age, available online: https://scarf.scot/wp-content/uploads/sites/15/2022/04/05_IronAge.pdf

7.6.17 The first detailed survey of the CB Route is the General Roy Survey dating to the mid-18th century[65]. This shows the land use and settlement pattern largely corresponding to that which survives in the contemporary landscape, with nucleated farmsteads within a mixed agricultural landscape. Large sections of the southern section of the CB Route are shown as arable land. The land use changes in the central area, where *Fannyside Loch* is depicted as moorland or moss, while the landscape between *Fannyside Loch* and the ridge overlooking the Carron Valley in the north is far more mixed with areas of pasture/semi-improved land noted.

7.6.18 The settlement pattern on the Roy Survey can also be largely traced in the contemporary landscape, albeit some settlements have grown and expanded. Most settlement names are relatively unchanged between the Roy Survey and the modern landscape, with the main towns of Falkirk recorded in the north, and *Carbran* (Carbrain) and Cumbernauld recorded in the south.

7.6.19 On the 1st Edition OS map (1859, Lanarkshire, Sheet III, scale six inches to one statute mile, published by Ordnance Survey of Southampton, 1864), the CB Route appears largely as agricultural land, with farmsteads such as South Drum (162756), located 191 m from the CB Route. This comprised of one unroofed building, one roofed long building of complex shape and two enclosures. Other notable features on the 1st Edition OS map are the Forth and Clyde Canal, which is a scheduled monument within the CB Route (SM6768), and has various parts recorded on the NRHE, such as Rowan Tree Burn Sluice and Aqueduct (171288 and 171296). The monument is approximately 9 miles (14.5 km) in length and runs from a point immediately west of the Red Burn Aqueduct (on the west) to immediately west of the M9 Motorway (on the east). Its importance derives from it being a superlative example of Georgian civil engineering.

7.6.20 There is an increase in residential housing recorded on historic mapping, including a house recorded on the NRHE (348771) on Laburnum Road, approximately 139 m from the CB Route.

7.6.21 There are also non-designated assets recorded on the NRHE relating to the coal industry, such as Roughcastle Fireclay Works and Mine (68414), located 116 m from the CB Route and dating to the 19th century. Located 71 m from the CB Route there is also a Tomb (302174), dating to the 19th century, comprising a south facing, square plan un-roofed burial enclosure.

Modern (AD1900 to Present)

7.6.22 By the OS map of 1982 (1960-1982, Ordnance Survey, 1:10,000, published 1982) the CB Route appears as it does today. There is a row of cottages depicted at Castlecary High Wood (268817), approximately 199 m from the CB Route, as well as a possible structure (268818) in rough ground located within the CB Route. Possible enclosures are also depicted at Garbethill Muir (268823), approximately 41 m from the CB Route.

7.6.23 Other non-designated assets recorded on the NRHE, related to the modern period, include a dragon mural (348769) located 187 m from the CB Route.

[65] General Roy Survey available at Georeferenced Maps viewer - Map images - National Library of Scotland, accessed 22nd November 2025.

Undated

7.6.24 There are three features recorded within the Study Area which remain undated on the NRHE. These include a pond (124445), located 241 m from the CB Route; a large, rough stone mortar (351533), located 146 m from the CB Route and a mine at Tippet Craigs (268825), located 81 m from the CB Route.

Site Visit

7.6.25 A Site Visit was undertaken between the 3rd to the 7th of November 2025. The purpose of this visit was to view the existing overhead line in the landscape and look for situations where the removal of the towers may result in significant impacts on heritage assets. Weather conditions varied from overcast with low cloud and heavy rain showers, but in general the conditions allowed good views of the landscape.

7.6.26 The Site visit also involved examining the access track works which will be 4m wide and stoned, as well as compounds. It was, however, noted that in many cases the trackway is already present and therefore will result in minimal intrusive works.

7.6.27 No new assets were recorded as part of the walkover survey, and none of the bell mouths are situated on stone walls but on hedge lines with no historical value.

LiDAR and Aerial Photography Review

7.6.28 A review of LiDAR data and aerial photographs was also undertaken alongside the review of historic mapping as part of the baseline assessment. This noted that relatively large areas of the northern and southern ends of the Study Area had been subject to disturbance as a result of 19th and 20th century industrial activities and mining. There was also some evidence of possible disturbance associated with the construction of the CB Route that is due to be decommissioned.

7.6.29 The review identified a number of new assets, most of which are associated with the post-medieval and modern development of settlements and industrial activities in the Study Area. These are discussed in the baseline text above, and are also listed in Appendix 7.1

Previous archaeological investigations

7.6.30 Fieldwork was conducted by West of Scotland Archaeology Service which identified a pond of an unknown date, located 241 m from the CB Route.

Future Baseline

7.6.31 Based on current knowledge, the future baseline is unlikely to change in the absence of the Project. Changes may occur as a result of other developments which could result in physical impacts, as well as impacts resulting from changes to the setting of assets.

7.6.32 Land use within the Study Area is likely to remain the same, and as such there is the potential for some degradation of buried archaeological remains in areas of arable cultivation.

7.6.33 Climate change could result in impacts to cultural heritage through aspects such as erosion resulting from extreme weather events. However, the extent to which this could occur is unknown.

Archaeological Potential

7.6.34 While there is evidence for human activity recorded within the wider area from the prehistoric period onwards, evidence from the CB Route is largely limited to post-medieval agricultural activity including farmsteads, or related to transportation, such as the Forth and Clyde Canal. Furthermore, the construction of the existing CB Route is assumed to have resulted in physical impacts near the existing towers which will also limit the archaeological potential. As a result, the archaeological potential is considered to be low for all periods. Any previously unrecorded assets are likely to be of local importance, and therefore of Low Value (sensitivity).

7.6.35 The exception is the Roman period. The CB Route crosses the Antonine Wall WHS and associated WHS buffer in an area where the monument is well preserved earthworks, to the west of Rough Castle (SM90013), with Tower CB035 located within the WHS. While the construction of the existing Tower may have resulted in impacts on buried archaeological remains, it is assumed that archaeological deposits dating to the Roman period will survive in the area where the WB Route crosses the WHS and its associated WHS buffer. Therefore, the potential for archaeological remains dating to the Roman periods within the Site is considered to be high. Any previously unrecorded assets are likely to be of regional importance due to possible associations with the Antonine Wall, and earlier Roman incursions into Scotland, and as such would be considered to be of Medium Value (sensitivity).

Embedded Mitigation Measures

7.6.36 Where possible, the Project, including all access tracks, has been designed to avoid previously recorded heritage assets, thereby avoiding the potential for physical impacts.

7.6.37 There are two scheduled monuments within the Project:

- SM6768-Forth and Clyde Canal: Castlecary - M9 Motorway; and
- SM90013-Antonine Wall, Rough Castle fort, annexe and Military Way.

7.6.38 The Project will include the removal of a Tower (Tower CB035) which is located within a scheduled component of the WHS (SM90013). Works will be limited to the area of the tower to be removed, and will require Scheduled Monument Consent from HES.

7.6.39 No works will take place within the Forth and Clyde Canal: Castlecary - M9 Motorway scheduled monument (SM6768), which will be marked as an exclusion zone during construction.

Assessment of Effects

Construction Phase

7.6.40 The construction phase has the potential to result in the following impacts:

- Permanent physical impacts on previously recorded heritage assets due to the removal of existing towers, and associated works including upgrades/construction of access tracks and compounds; and

- Permanent physical impacts on previously unrecorded heritage assets due to the removal of existing towers, and associated works including upgrades/construction of access tracks and compounds.

7.6.41 Two designated assets (one of which is a WHS), and one non-designated heritage asset are recorded within the CB Route. The non-designated heritage asset is located away from the proposed works, and as such, based on the current design, there are no impacts on this asset predicted. As a result, this asset has not been taken forward to full assessment (see Table 7-17).

Table 7-17: Assets within the CB Route Site that have been scoped out of the assessment

Receptor ID	Receptor Name	Reason Scoped Out
SM6768; 171288; 171296	Forth and Clyde Canal: Castlecary - M9 Motorway. Including Forth and Clyde Canal, Rowan Tree Burn Sluice and Forth and Clyde Canal, Rowan Tree Burn Aqueduct.	Works limited to scaffolding towers located outside of the scheduled area.
268818	Castlecary High Wood: Structure (Period Unassigned)	Not within any below ground works such as towers or access roads, nearest tower 255 m.

7.6.42 The work to decommission the CB Route falls within a single designated asset, and as such there is the potential for the construction phase to result in physical impacts on this asset (see Table 7-18 below).

Table 7-18: Assets within the CB Route Site that have been scoped into the assessment

Receptor ID	Receptor Name	Period	X	Y
WH1; WHB1; SM90013	Antonine Wall WHS Boundary and WHS buffer. Including Antonine Wall, Rough Castle fort, annexe and Military Way.	Roman	284349	679856

Antonine Wall WHS, Rough Castle fort, annexe and Military Way (WH1; WHB1; SM90013)

Antonine Wall WHS buffer (WH1, WHB1, SM8244)

7.6.43 A detailed assessment of the likely effects on the Antonine Wall WHS has been undertaken in a specific Heritage Impact Assessment (HIA) in line with UNESCO Guidance (see Appendix 7.4, Section 5). This assessed likely effects resulting from physical impacts

from temporary works including an access track to the Tower CB035, as well as the removal of Tower CB035.

7.6.44 This concluded that in areas where there had been previous disturbance (removing all archaeological remains), or where no previous archaeological remains had been recorded, there will be **no impacts** on Attributes that convey the OUV of the WHS or its Integrity and Authenticity. This is defined as **NEUTRAL** in HIA terms.

7.6.45 While there will be limited to works within SM90013, a scheduled component of the WHS, these will be limited to removal of an existing pylon (CB035), as well as minor access tracks using non-intrusive methods.

7.6.46 Works associated with the non-intrusive methods used to create an access track to Tower CB035 as approved via SMC 300086054 granted by HES on the 27th May 2026.

7.6.47 An initial phase of evaluation works around the tower have also been approved as part of SMC 300083166 granted on the 16th April 2026.

7.6.48 As the works associated with this consent will mitigate adverse effects resulting from physical impacts, this will not result in adverse impacts.

7.6.49 The assessment also examined the likely effects from impacts on previously unrecorded assets that may be found to survive during works and that also contribute to the OUV of the asset. This concluded that there is the potential for previously unrecorded remains associated with the Antonine Wall to survive, and these would have the potential to be of local, regional, or national significance. Furthermore, any physical impacts could result in impacts to remains that contribute to Attributes of the OUV of the WHS, as well as its Integrity and Authenticity. It would, however, be unlikely that the Project would result in the total loss of these remains. As such, the level of impacts on any previously recorded assets that might survive, and contribute to Attributes of the OUV of the WHS, is determined to be '**Minor Negative Impact'** in HIA terms.

7.6.50 It is considered that a Minor Negative Impact in HIA term is deemed to 'not significant' in EIA term.

Operational Phase

7.6.51 Due to the nature of the Project, there are no likely negative effects resulting from the Operational Phase as the setting will be altered positively due to the removal of the CB overhead line (thereby resulting in a beneficial effect as detailed below).

7.6.52 An HIA was undertaken to assess the effects resulting from the removal of the Overhead Line. The Overhead Line runs through the WHS with one tower located within the scheduled component west of Rough Castle. The current positioning of this tower within the WHS partially severs views along the Roman defences when looking east-west, as well as views into Rough Castle when viewed from the west. It is also positioned close to the alignment of the military road south of the Wall which linked the Roman features and was key to the functional setting of the Wall. As such, the removal of the tower, which currently negatively affects the setting of the monument, would improve the setting of the WHS and Attributes of OUV where setting is a contributing element.

7.6.53 As such, the level of impact on Attributes of OUV as a result of changes to setting through the removal of a pylon from within the WHS as well as an Overhead Line that crosses it is

considered to be '**Moderate Positive Impact'** in HIA terms. In EIA terms, this is considered to be a Significant Beneficial effect.

Summary of Significant Effects

7.6.54 There are no assets where the Construction or Operational Phases of the CB Route removal would result in a significant adverse effect.

7.6.55 The removal of a pylon within the WHS, as well as the Overhead Line that oversails the WHS and WHS buffer would result in a Moderate Positive Significance of Effect.

Proposed Additional Mitigation Measures

7.6.56 Mitigation measures, subject to consultation with stakeholders, may include but are not limited to archaeological monitoring, trial trenching and strip, map and record.

7.6.57 The works associated with the removal of the CB Route will include the removal of one tower (Tower CB035) located within the scheduled component of the WHS (SM90013). The removal of this tower, as well as an associated works (including, but not limited to, access tracks) will require Scheduled Monument Consent.

7.6.58 All mitigation works will be agreed with the relevant Local Authority Archaeological Advisor, and HES in the case of designated assets, once full details of the construction works have been agreed and prior to works commencing.

Residual Effects

7.6.59 There are no negative significant residual effects from the CB Route as the overhead line is being removed, with the only residual effect being a beneficial resulting from the removal of a pylon and the overhead line from the WHS.

Table 7-19: *Residual significance of effect after mitigation*

Asset ID/ Description	Significance of Effect	Additional Mitigation	Residual Effect
Antonine Wall WHS and associated WHS buffer (WH1; WHB1; SM8244)	**Moderate Positive Impact**	CH-8	**Moderate Positive Impact**

Monitoring

7.6.60 The requirement for archaeological monitoring would be agreed with Stakeholders as part of the mitigation strategy. This will be undertaken by an Archaeological Clerk of Works and include work within the immediate environs of the WHS, as well as areas of previously recorded assets.

7.7 Assessment of Effects, Mitigation and Residual Effects of the AA Route Undergrounding

Introduction

7.7.2 This section examines the potential effects and impacts on sites of archaeological and cultural heritage interest resulting from the undergrounding of sections of the existing AA Route (the Project). Baseline data was collected for the Site as well as a 250m Study Area, in order to assess the archaeological potential of the Site, while a wider 500m Study Area was used to examine the potential for impacts through changes to setting.

Baseline and Future Baseline Conditions

Geology, Topography, and Land Use

7.7.3 The section of the AA Route subject to undergrounding runs from Bonnybridge Substation in the north (NGR 84129 80943) to Greenrig in the south (NGR NS 84446 78258).

7.7.4 The bedrock geology of the north end of the Study Area comprises Passage Formation, which is formed with sedimentary rock cycles, of Clackmannan Group type. Overlaying this is a superficial deposit of Raised Marine deposits comprising clay, sand and gravels, formed between 116 and 11.8 thousand years ago during the Quaternary period. To the south of the Forth and Clyde Canal, the bedrock geology changes to Scottish Lower Coal Measures Formation, formed of sedimentary rock cycles and coal measures type. Overlaying this is superficial deposits of Devensian Till, formed between 116 and 11.8 thousand years ago and sediments formed between 2.588 million years ago and the present during the Quaternary period.

7.7.5 Land use is dominated by agriculture, with the lower lying land along the Forth and Clyde Canal, in the north, primarily arable in character. As the land rises slightly to the south, land use becomes more mixed with areas of woodland and pasture.

Designated Assets

7.7.6 There are six designated assets within the Study Area of the AA Route, including the Antonine Wall element of Frontiers of the Roman Empire WHS Boundary (WH1) and associated WHS buffer (WHB1). This monument comprises several scheduled components including Rough Castle Fort (SM90013) and Antonine Wall southeast of Bonnyside House (SM8207). Other scheduled monuments include Wester Carmuirs ring ditch settlement (SM6413) and a palisade enclosure (SM6414), both of which are assumed to be Iron Age in date, as well as the Forth and Clyde Canal: Castlecary - M9 Motorway (SM6768), which dates to the post-medieval period.

7.7.7 Other scheduled monuments in the Study Area include parts of the Antonine Wall (SM12606) and (SM8244), as well as a Palisade Enclosure (SM6414), located east of Wester Carmuirs Farm.

7.7.8 Finally, within the Study Area there is a single listed building, the Category C listed Bonnyside House (LB49998).

Prehistoric – Palaeolithic to Bronze Age (40,000BC to 800BC)[66]

7.7.9 There are three assets dating to the prehistoric period within the AA Route Study Area, one being a Scheduled Monument, and the other two – non-designated assets.

7.7.10 Evidence for settlement relating to this period includes a palisaded enclosure dated to the late prehistoric period (SM6414/ 76356), situated approximately 479 m from the Site. A series of pits and a ring ditch (340450) is also located 232 m from the Proposed Route. While undated through excavation, the form of this asset would suggest a late prehistoric (and possibly Iron Age) date.

7.7.11 There is a single findspot relating to the prehistoric period which is a Late Bronze Age gold bracelet (46804), found approximately 13 m from the AA Route.

Iron Age and Roman (800BC to AD400)

7.7.12 There is more extensive evidence dating to the Iron Age and Roman periods, with a total of three assets recorded within the AA Route Study Area. These include the Antonine Wall WHS, of Roman date, which consists of a number of scheduled components (WH1; SM90013; SM8244), as well as the scheduled Wester Carmuirs Ring Ditch Settlement (SM6413) and a scheduled Palisade Enclosure (SM6414), both of which are assumed to date to the Iron Age.

7.7.13 Iron Age Scotland saw a continuation of settlement, however, there were many different regional variations such as brochs, duns, wheelhouses, timber and stone-built roundhouse settlements, unenclosed platform settlements, crannogs, enclosed farmsteads and hillforts. These provide valuable insight to communities and personal identities. However, more recent discoveries, such as the assembled chariot located at Newbridge, west of Edinburgh, shows the Iron Age people of Scotland had links with the Continent.[67]

7.7.14 Assets positively dated to the Iron Age are limited due a lack of excavation, however, the form of a palisaded enclosure (SM6414/ 76356) situated approximately 479 m from the Site, as well as Wester Carmuirs ring ditch settlement (SM6413) both suggest an Iron Age date. These assets are both located on the lower lying land that would have been more suitable for settlement activity, although an absence of evidence may also be a result of limited fieldwork in the area.

7.7.15 The Roman period saw a time of turbulence with the Roman armies making three attempts to conquer this part of Scotland, but each was short-lived.[68] The AA Route is within the Antonine Wall WHS and associated WHS buffer (WH1) and (WHB1) which was the most northerly frontier of the Roman Empire, running for 37 miles from modern Bo'ness, on the Firth of Forth, to Old Kilpatrick on the River Clyde. At the time, the Wall was the most complex frontier ever constructed by the Roman army. Built on the orders of the

[66] Due to the varied nature of the Scottish landscape, and the resulting variations in settlement/land use, there is no agreed chronology at a national level. As such, the dates that have been assigned to the various periods for the baseline study are those set out in the Scottish Archaeological Research Framework (ScARF) available at Panel Reports Chronology and Downloads | The Scottish Archaeological Research Framework.
[67] ScARF 1. Introduction | The Scottish Archaeological Research Framework
[68] National Museum Scotland (2025) available online: A brief history of Roman Scotland | National Museums Scotland

Emperor Antoninus Pius the wall was both a physical barrier and a symbol of the Roman Empire's power and control.[69]

7.7.16 A single asset dating to the Roman period has been identified within the Study Area. This is the Antonine Wall WHS and its associated WHS buffer, which is formed from a number of scheduled components. These include the Wall and Associated Defences to the west of Rough Castle Fort (SM90013), which the AA Route crosses, as well as Rough Castle Fort (SM8244) immediately to the east of the AA Route. This fort represents the best preserved of all of the Antonine Wall forts, comprising a wall, ditch and outer mound, located 100 m from the AA Route. Other fortifications covered by the scheduling include part of the Antonine Wall northwest of St Josephs Church (SM12606) and the Antonine Wall located at Bonnyside House (SM8207).

7.7.17 There are also several findspots within the Study Area including a coin (47021), found approximately 191 m from the AA Route, and a ring (47020), recovered approximately 390 m from the AA Route.

Medieval (AD400 to AD1500)

7.7.18 There is a single asset dating to the medieval period within the AA Route Study Area. This is an area of cultivation terraces that have been dated based on their form (47020).

7.7.19 The limited number of assets is likely the result of the AA Route passing through the agricultural land, and avoiding the main settlements. The valley of the River Carron, which runs through the Study Area on an east-west alignment, represented the eastern end of a natural corridor linking the east and west coasts of Scotland. This had originally been exploited by the Romans when they constructed the Antonine Wall on the south escarpment of the valley, and the corridor remained a key link during the medieval period, with settlements such as Falkirk (*c.* 5km to the east of the Study Area) and Denny (*c.* 3km to the northwest) recorded from at least the 12th century[70].

7.7.20 While ridge and furrow has been recorded in the wider landscape, no traces have been recorded within the AA Route Study Area, although this is likely the result of later 20th century agricultural practices including the levelling and removal of earthworks. Placename evidence would suggest that ridge and furrow cultivation was taking place, probably into the post-medieval period, with names such as Greenrig and Howierig recorded near the southern end of the AA Route Study Area.

7.7.21 Further evidence for agriculture dominating the medieval landscape comes from the '*Auchen*' placename element. This element stems from the Gaelic '*Achadh*' meaning field, with Auchengean near the southern end of the AA Route Study Area again suggestive of an agricultural landscape[71].

7.7.22 Attempts to improve the land for agriculture have also been recorded within the Study Area, with a series of cultivation terraces (47020) located 390 m west of the Site. These manmade features were created to make flat, fertile surfaces for farming on a hill slope, although their dating is tentative as they may also date to the post-medieval period.

[69] UNESCO (2025), available online: Frontiers of the Roman Empire: The Antonine Wall | UNESCO in the UK
[70] Smith, R. (2001) *The Making of Scotland,* Edinburgh: Canongate Books Limited.
[71] Nicolaisen, W. F. H. (2001) *Scottish Place-names*, Edinburgh: John Donald.

Post-Medieval (AD1500 to AD1900)

7.7.23 A total of 11 heritage assets dating to the post-medieval period were identified within the Study Area. These comprise one Scheduled Monument and 10 non-designated assets of which one falls within the AA Route.

7.7.24 By the time of the 2nd Edition OS map 1899 (1896, Second Edition of 1899, Sheet XXX.N.W, scale six inches to one statute mile, published by Ordnance Survey office, Southampton, 1899), the AA Route was becoming more developed, with Bonnybridge expanding to include additional terrace housing and increased industrial activity in the form Bonnybridge Gasworks (47032) and Brick Works (143828).

7.7.25 Further industrialisation of the Study Area and wider landscape includes a colliery, open cast mine and fire clay mine (68414), located 35 m from the Site; a works (46794), situated approximately 240 m from the Site; a brickworks (141884), located 440 m from the Site; and a fireclay works and mine (141912), sited at Rough Castle, approximately 145 m from the AA Route.

7.7.26 Another integral part of the industrialisation was the improvements to transportation, such as the Forth and Clyde Canal, parts of which are within the AA Route, such as a point immediately west of the Red Burn Aqueduct (on the west) to immediately west of the M9 Motorway (on the east) which is a Scheduled Monument (SM6768), as well as an aqueduct (171296) and basin (171300) recorded on the NRHE. The importance of this asset derives from it being Scotland's first inland waterways constructed between 1768 and 1790 and being an example of Georgian civil engineering.

7.7.27 Bonnyside House, a Category C listed building (LB49998/ 371460), dating to the 19th century, is situated approximately 35 m from the Site. Its historical importance derives from being a little altered example of a modest mid-nineteenth century house. It is also notable that a section of the Antonine Wall runs through the grounds of Bonnyside House.

7.7.28 The landscape of the AA Route largely continued in agricultural use. This is represented by farmsteads such as Howierig Farm (143540), located 8 m from the Site.

Modern (AD1900 to Present)

7.7.29 A total of five assets dating to the modern period were identified within the Study Area, comprising non-designated assets. Of these assets none fall within the AA Route.

7.7.30 Further industrial activity within the Study Area included the construction of the former Bonnybridge Power Station (105789), as well as Chattan Stove and Iron Works (312432) approximately 15 m from the Site.

7.7.31 Public buildings of the period are also apparent in the Study Area, including Bank of Scotland, Bonnybridge, which was in operation between 1922 and 1925 (143703), located 480 m from the Site, as well as St Joseph's Roman Catholic Church (143858), located 460 m from the Site and constructed in the 1930s.

7.7.32 A commemorative stone erected in the 21st century known as the Battle of Bonnymuir Memorial (369820), sited 395 m from the route describes the battle in 1820, where working-class radicals fought against the British Army. It notes the execution of the leaders, John Baird and Andrew Hardie.

Undated

7.7.33 Evidence for agricultural activity within the Study Area includes cropmarks (47024) located at Wester Carmuirs, approximately 40 m from the Site and a field system (46790), located 260 m from the Site.

7.7.34 A single findspot of a large, rough stone mortar was found on Bonnyhill Farm (351533), approximately 30 m from the Site.

Site Visit

7.7.35 A Site Visit was undertaken between the 3rd to the 7th of November 2025. The purpose of this visit was to view the existing overhead line in the landscape and look for situations where the removal of the pylons may result in significant impacts on heritage assets. As well as any impacts to the below ground installation of the AA Route. Weather conditions varied from overcast with low cloud and heavy rain showers, but in general the conditions allowed good views of the landscape.

7.7.36 The Site visit also involved examining the access track works, which will be 4m wide and stoned. It was, however, noted that in many cases the trackway is in arable land where the trackway is already present and therefore will result in minimal intrusive works.

7.7.37 No new assets were recorded as part of the walkover survey, and none of the bell mouths are situated on stone walls but on hedge lines with no historical value.

LiDAR and Aerial Photography Review

7.7.38 A review of LiDAR and aerial photographs was undertaken as part of the baseline study. This did not identify any new assets but the LiDAR analysis did confirm that large areas of earthworks are evident within blocks of modern woodland along the line of the Antonine Wall. The review also noted disturbance to the Antonine Wall resulting from later mining and quarrying activities.

Previous Archaeological Investigations

7.7.39 An archaeological investigation was conducted along the Antonine Wall, approximately 420 m (373501) from the Site. Although traces of the Antonine Wall ditch were visible in the neighbouring wood, no significant archaeological features or deposits were noted during the excavation.

Future Baseline

7.7.40 Based on current knowledge, the future baseline is unlikely to change in the absence of the Project. Changes may occur as a result of other developments which could result in physical impacts, as well as impacts resulting from changes to the setting of assets.

7.7.41 Land use within the Study Area is likely to remain the same, and as such there is the potential for some degradation of buried archaeological remains in areas of arable cultivation.

7.7.42 Climate change could result in impacts to cultural heritage through aspects such as erosion resulting from extreme weather events. However, the extent to which this could occur is unknown.

Archaeological Potential

7.7.43 There is evidence for activity and settlement from the prehistoric period onwards within the Study Area. The Site visit showed no evidence for additional heritage assets. There is high archaeological potential related to the Roman period due, to its location within the Antonine Wall World Heritage Site Boundary and WHS buffer, which includes well-preserved Roman fortifications, fortlets, signal platforms, and sections of the wall itself as scheduled monuments. Any previously unrecorded assets are likely to be of national to regional importance due to possible associations with the Antonine Wall, and earlier Roman incursions into Scotland, and as such would be considered to be of High to Medium Value (sensitivity).

7.7.44 There is also significant potential for understanding post-medieval industrialisation and transport networks, highlighted by the presence of the Forth and Clyde Canal, as well as other assets such as gasworks, brickworks and mines. Any previously unrecorded assets are likely to be of local importance, and therefore of Low Value (sensitivity).

Embedded Mitigation Measures

7.7.45 Where possible, the Project, including all access tracks, has been designed to avoid previously recorded heritage assets, thereby avoiding the potential for physical impacts.

7.7.46 There are four scheduled monuments within the Project:

- SM6413-Wester Carmuirs, ring ditch settlement 450m SSW of;
- SM6768-Forth and Clyde Canal: Castlecary - M9 Motorway;
- SM8207-Antonine Wall, 495m WSW and 125m SE of Bonnyside House; and
- SM90013-Antonine Wall, Rough Castle Fort, Annexe and Military Way.

7.7.47 Although these scheduled monuments fall within or close to areas marked for works associated with the Project, no works will take place within the scheduled monuments, which will be marked as exclusion zones during construction.

Assessment of Effects

Construction Phase

7.7.48 The construction phase has the potential to result in the following impacts:

- Permanent physical impacts on previously recorded heritage assets due to the construction of new terminal towers, undergrounding of cables and access track works; and
- Permanent physical impacts on previously unrecorded heritage assets due to construction of new terminal towers, undergrounding of cables and access track works.

7.7.49 Six designated assets and four non-designated assets are recorded within the AA Route. Two designated assets and two non-designated assets are not located near any proposed works, such as tower foundation upgrades or access track works. As such, based on the current design there are no impacts on these assets predicted, and, as a result, these assets have not been taken forward to full assessment (see Table 7-20).

Table 7-20: Assets within the Site that have been scoped out of the assessment

Asset ID	Asset Name	Reason Scoped Out
SM6768	Forth and Clyde Canal: Castlecary - M9 Motorway	The asset is located approximately 60 m south of the nearest tower (Tower AA001), with scaffolding proposed to the north and south to allow for the watercourse crossing. This scaffolding will also be outside of the scheduled area. Therefore, no physical impacts are predicted.
SM6413	Wester Carmuirs, ring ditch settlement 450m SSW of	The asset is located in the field to the south of where a temporary access track will constructed. As such, works will be limited to a field adjacent to the scheduled area, and no impacts are expected.
171288	Sluice (Period Unassigned)	The asset is located approximately 70 m south from the nearest tower AA001. therefore, no physical impact will occur to assets.
171296	Aqueduct (Period Unassigned)	The asset is located approximately 85 m southwest from the nearest tower AA001 therefore, no physical impact will occur to assets.

7.7.50 The remaining assets recorded within the AA Route are close to proposed works which may involve ground disturbance, such as construction of access tracks, installation of temporary masts, removal of redundant equipment, installation of new terminal towers and excavation of trenches for cable ducts (Table 7-21). As a result, these assets have been taken forward to assessment.

Table 7-21: Assets within the Site that have been scoped into the assessment

Asset ID	Asset Name	Period	X	Y
WH1; WHB1; SM90013; SM8207	Antonine Wall World Heritage Site Boundary, WHS buffer, and scheduled components: Antonine Wall, Rough Castle fort, annexe and Military Way; and	Roman	275462 284126 283292	676737 679862 679779

	Antonine Wall, 495m WSW and 125m SE of Bonnyside House.			
N/A	Previously unrecorded archaeology	N/A	N/A	N/A

Antonine Wall WHS buffer (WH1, WHB1, SM8244)

7.7.51 A detailed assessment of the likely effects on the Antonine Wall WHS has been undertaken in a specific Heritage Impact Assessment (HIA) in line with UNESCO Guidance (see Appendix 7.4, Section 5). This assessed likely effects resulting from physical impacts from temporary works such as construction compounds and access tracks, as well as the construction of the new towers.

7.7.52 There will be no physical impacts on the WHS as no works are no works proposed for the AA Route within the scheduled components of the WHS, with the works restricted to the WHS buffer.

7.7.53 This concluded that in areas where there had been previous disturbance (removing all archaeological remains), or where no previous archaeological remains had been recorded, there will be **no impacts** on Attributes that convey the OUV of the WHS or its Integrity and Authenticity. This is defined as **NEUTRAL** in HIA terms.

7.7.54 The assessment also examined the likely effects from impacts on previously unrecorded assets that may be found to survive during works and that also contribute to the OUV of the asset. This concluded that there is the potential for previously unrecorded remains associated with the Antonine Wall to survive, and these would have the potential to be of local, regional, or national significance. Furthermore, any physical impacts could result in impacts to remains that contribute to Attributes of the OUV of the WHS, as well as its Integrity and Authenticity. It would, however, be unlikely that the Project would result in the total loss of these remains. As such, the level of impacts on any previously recorded assets that might survive, and contribute to Attributes of the OUV of the WHS, is determined to be '**Minor Negative Impact'** in HIA terms.

7.7.55 It is considered that a Minor Negative Impact in HIA term is deemed to 'not significant' in EIA term.

Operation Phase

7.7.56 Due to the nature of the Project, potential effects resulting from changes to the setting of assets are not likely. As such, no effects are predicted for the Operational Phase.

Summary of Significant Effects

7.7.57 No significant effects have been identified during the assessment.

Additional Mitigation Measures

7.7.58 Evaluation works, in the form of trial trenching, will be required to inform mitigation. A detailed mitigation strategy will be agreed through consultation with stakeholders and may include, but not be limited to, full archaeological excavation, archaeological

monitoring, and strip, map and record. Where possible assets will be avoided and will be fenced off to avoid accidental damage. Provisional mitigation types are set out in Table 7.8.

7.7.59 In areas where historic landscape features, such as drystone walls and stone dykes cannot be avoided, any elements removed during construction should be rebuilt in the same form once construction is complete. In areas where this cannot take place due to a permanent access being required, the ends of walls / dykes should be 'made good' during the construction phase to avoid the feature deteriorating through erosion.

7.7.60 Works during the Construction Phase have the potential to result in physical impacts on scheduled components of the Antonine Wall WHS, as well as other scheduled monuments north of the Antonne Wall. Any work within the scheduled area would require SMC, and an application for SMC will be submitted which will include a detailed proposal for site specific mitigation. As such, mitigation will be agreed as part of the SMC application and in pre-application consultation with HES.

7.7.61 All mitigation works will be agreed with the relevant Local Authority Archaeological Advisor (currently assumed to be SAA), and HES in the case of designated assets, once full details of the construction works have been agreed and prior to works commencing.

Residual Effects

7.7.62 There are no likely residual significant effects identified by the assessment.

Monitoring

7.7.63 The requirement for archaeological monitoring would be agreed with Stakeholders as part of the mitigation strategy. This will be undertaken by an Archaeological Clerk of Works, and include work within the immediate environs of the WHS, as well as areas of previously recorded assets.

7.8 Assessment of Effects, Mitigation and Residual Effects of the Denny North Substation Works

Introduction

7.8.2 This Section examines the potential effects and impacts on sites of archaeological and cultural heritage interest resulting from the Project at Denny North Substation. Baseline data was collected for the Site as well as a 250m Study Area in order to assess the archaeological potential of the Site, as well as the potential for physical impacts. A 500 m Study Area was also examined to assess the potential for impacts through changes to setting.

Baseline and Future Baseline Conditions

Geology, Topography, and Land Use

7.8.3 The Project (centred on NGR NS 82340 84441) is located within the existing Denny Substation, which is positioned on a small hill approximately 2km northeast of the town of Denny (Figure 7.10). The superficial geology of the Project is dominated by glacial deposits, typically consisting of Diamicton material of clay, silt, sand, gravel, cobbles and boulders. This is overlain by a lens of peat at the northern and eastern extents of the

Project which may extend further. These deposits overlie various sedimentary bedrock formations, typically Upper Limestone and Passage Formations of the Clackmannan Group type.

7.8.4 Mapping from the Ordnance Survey (OS) indicates the Project to be situated at approximately 100m Above Ordnance Datum (AOD) and the land falling from the north to south.

7.8.5 As indicated by the Historic Landscape Assessment mapping, the site is characterised by rectilinear field boundaries and associated farm steadings and other buildings are typical of agricultural improvements since the 1700s, with some areas of Rough Grazing. To the south and east the landscape is dominated by coniferous tree plantation with some areas felled.

Designated Assets

7.8.6 There are no designated assets within the Site of the Denny North Substation.

7.8.7 There is one scheduled monument within the Study Area comprising a prehistoric dun (small fort built on a hillock or crag) 700m north of Doghillock (SM6929), approximately 25m south-west of the Site.

Non-designated Assets

7.8.8 There are no non-designated heritage assets recorded within the Site, though there are three non-designated assets within the Study Area. A spread of large oak logs with axe-dressed ends were recorded and sampled at Torwood Mire (369726). Dendrochronological analysis of the oak assemblage produced two floating tree-ring chronologies which were subsequently dated by radiocarbon to the Mesolithic and Neolithic periods, while the wide-bladed metal axe marks on some of the oak logs could date to any time from the Roman Iron Age to the early modern period. A findspot of a shale object (47047) was also recovered from the foot of Doghillok dun. A modern quarry called Thorndyke Quarry (22796) is also recorded.

Prehistoric – Palaeolithic to Bronze Age (40,000BC to 800BC)[72]

7.8.9 Scotland's climate was dominated by the end of the Ice Age with periods of extreme cold, such as the Younger Dryas. These were characterised by the local development of ice caps and valley glaciers as well as the development of permafrost during the Palaeolithic[73]. The early prehistoric period, from the Palaeolithic to Mesolithic periods, saw a significant changes. The Palaeolithic period saw the development of social structures and stone tools, whilst during the Mesolithic period there was a transition to a warmer climate with a continuation of the hunter-gatherer lifestyle. This then culminated in the Neolithic with the development of agriculture and more permanent settlements [74].

[72] Due to the varied nature of the Scottish landscape, and the resulting variations in settlement/land use, there is no agreed chronology at a national level. As such, the dates that have been assigned to the various periods for the baseline study are those set out in the Scottish Archaeological Research Framework (ScARF) available at Panel Reports Chronology and Downloads | The Scottish Archaeological Research Framework.
[73] Scottish Archaeological Research Framework, available online: https://scarf.scot/thematic/scarf-science-panel-report/4-people-and-the-environment/4-8-palaeoclimatology/
[74] Bell and Walker (2005) Introduction to the Palaeolithic and Mesolithic Periods available online: https://scarf.scot/national/palaeolithic-mesolithic-panel-report/1-introduction-to-the-palaeolithic-and-mesolithic-periods/

7.8.10 The Chalcolithic and Bronze Age in Scotland (c. 2450-800 BC) is defined by the introduction and use of copper and bronze, which enabled trade and interaction with other parts of Britain and Europe. This period also saw significant social, economic, and cultural changes, including a change in social stratification, regional diversity, and increased interaction[75].

7.8.11 Evidence from previously recorded assets in the Study Area represent human activity from the prehistoric period onwards. This can be seen from Doghillock, dun (SM6929), located 24 m from the Denny North Substation Site. The dun monument comprises a stony circular mound 15 to 20 m in diameter, identified during the 1980s. Moreover, a findspot of a shale object (47047) was also recovered from the foot of the dun. The object is leaf-shaped, but with one flattened side, it measures 59 mm in length, 38 mm in width and is 5 to 7 mm thick. Both flat surfaces are covered in a multiple of fine scratches and larger score marks.

7.8.12 An archaeological watching brief was conducted, between November 2012 and July 2013, at Torwood Mire, located 38 m from the Site (369726). Torwood lies within an area of significant Iron Age settlement comprising a broch measuring 10.8 m by 9.8 m, enclosed by a wall measuring 6.1 m thick. The watching brief found a spread of large oak logs with axe-dressed ends, which after dendrochronological analysis dated the oak to the Mesolithic and Neolithic periods, while the axe marks on some are dated to the Iron Age/Roman to early modern periods.

Iron Age and Roman (800BC to AD400)

7.8.13 Iron Age archaeology in Scotland has focused heavily on settlements, particularly those in northern and western Scotland, with sites like brochs, duns, and hillforts providing detailed insights into architectural and societal developments. However, recent discoveries of funerary evidence, such as an assembled chariot located at Newbridge, west of Edinburgh, are shifting the focus to better understand the population itself during this period[76].

7.8.14 Iron Age assets within the Study Area are limited to the scheduled Doghillock dun (SM6929). As noted above, limited archaeological work has been undertaken on the site, however, the asset appears to have evidence of earlier prehistoric activity as well as the Iron Age phase which represents the key phase of occupation.

7.8.15 While Hadrian's Wall in northern England is a prominent symbol of the Roman Empire's longer lasting northern boundary, it did not define the full extent of Roman influence in Scotland during earlier Roman periods. Roman armies campaigned in Scotland and even reached the Moray Firth, while the Roman navy sailed around Scotland to Orkney. Roman garrisons were stationed along the east coast as far north as Stracathro in Angus, and Roman artifacts have been found throughout the country. This shows there was a significant Roman presence throughout Scotland[77].

[75]Scottish Archaeological Research Framework, available online: https://scarf.scot/national/scarf-bronze-age-panel-report/executive-summary-5/
[76] Scottish Archaeological Research Framework, available online: https://scarf.scot/national/iron-age-panel-report/1-introduction-4/
[77]National Museums Scotland, available online: https://www.nms.ac.uk/discover-catalogue/a-brief-history-of-roman-scotland

7.8.16 The earliest evidence of Roman campaigns in Scotland began in the 70s AD under the Emperor Vespasian and his son, the Governor Agricola. By both land and sea, it took him only seven years to take Rome's first conquest of territories in Scotland. To solidify their position, some forts were built, including ones that would later become the line of the Antonine Wall.[78]

7.8.17 By AD 140 the construction of the Antonine Wall, to the south of the Substation, commenced under the new Emperor Antoninus Pius. This formed the northern boundary of the Empire until it was abandoned[79].

7.8.18 There are no Roman assets recorded on the NRHE within the Denny North Substation Site itself or the wider Study Area.

Medieval (AD400 to AD1500)

7.8.19 There are no Medieval assets recorded on the NRHE within the Denny North Substation Site itself or the 250 m Study Area, although evidence for activity during this period has been recorded in the wider landscape. During the 12th century Denny and Dunipace were first documented, they were initially known as the "lands of Dunipace" and later "Barony of Dunipace". Much later, a significant part which lay in the parish of Denny took the name of South Herbertshire. The remainder of the parish of Denny came into the hands of one of the Orders of the Knights Templar at some time prior to the fourteenth century and was known as the Barony of Denny or Temple-Denny[80].

7.8.20 In 1309 the Barony of Denny in the valley to the east was one of ten in Scotland owned by the Priory of Torphichen[81].

Post-Medieval (AD1500 to AD1900)

7.8.21 Until 1601 Denny was part of the Parish of Falkirk but in that year a new Parish of Denny was created. By the 1700s Denny was known for its wool and calico industries, though these gave way to paper mills during the 1800s. In 1858 Denny found itself linked to Scotland's rapidly growing railway network by means of a three mile long branch line from a junction on the Caledonian Railway south of Larbert. Several coal mines opened around the town, following the arrival of the railway, and a foundry opened for business in 1870. A gasworks using the locally extracted coal soon followed[82].

7.8.22 Early County Surveys of the Study Area provide limited information regarding land use due to their scale. However, they show a rough settlement pattern that largely mirrors the modern settlement layout with a focus on the lower lying areas along the River Carron and the Bonny Water to the south, as well as the valley of the Forth to the north.

7.8.23 The first detailed survey of the Site is the General Roy Survey dating to the mid-18th century[83]. This shows most of the Site as pasture, with arable land on the lower ground. The settlement pattern on the Roy Survey can also be traced in the contemporary

[78] The Antonine Wall (2025) available online: https://www.antoninewall.org/about-the-antonine-wall/the-romans-in-scotland
[79] Historic Environment Scotland Antonine Wall | Lead Public Body for Scotland's Historic Environment
[80] John Reid The Feudal land divisions of Denny and Dunipace, available online: https://falkirklocalhistory.club/wp-content/uploads/2021/01/8.21-the-feudal-land-divisions-of-denny-and-dunipace-part-1.pdf
[81] Robin Smith () The making of Scotland: A comprehensive Guide to the Growth of its Cities, Towns and Villages
[82] Undiscovered Scotland, 2000-20205, available online: https://www.undiscoveredscotland.co.uk/denny/denny/index.html
[83] General Roy Survey available at Georeferenced Maps viewer - Map images - National Library of Scotland, accessed 22nd November 2025.

landscape, with most settlement names continuing to the present day. This includes Dunhillock near the Site.

7.8.24 The Denny North Substation Site is depicted as open fields with Tor Wood, Torwood Glen and a small farmhouse buildings labelled as Langlees to the north, as well as the River Carron to the south, depicted on the 1st Edition OS map of 1861 (1861, Area of St Ninians, Stirlingshire, Sheet XXIV, scale six inches to one statute mile, published by Colonel Sir H James, 1865).

7.8.25 By the time of the 2nd Edition OS map of 1897 (1895, Second Edition 1897, Sheet XXIV.5, scale 25.344 inches to a statute mile, published by the director general at Ordnance Survey office, Southampton, 1897), there is no change in the Denny North Substation Site and surrounding area from the previous map, other than the addition of Thorndyke Quarry (22796) that appears at the corner of the mapping. This was a sandstone quarry that operated alongside another quarry (referred to as the "Drumhead" Quarry) in the latter half of the 1800s, with some operators even managing both locations. The Union Canal's opening in 1822 allowed the quarry's sandstone to be shipped to major Scottish cities like Glasgow, Linlithgow and Edinburgh, primarily for paving stone[84].

7.8.26 Moreover, the series of farmhouse buildings, labelled as Langlees to the north of the Denny North Substation Site on the 1st Edition OS map appears to have been extended by 2nd Edition OS map, with additional buildings, a well and is renamed as Langlands.

Modern (AD1900 to Present)

7.8.27 By the Ordnance Survey mapping of 1913 (OS) (1913, Edition of 1917, Sheet XXIII.12. scale 25.344 inches to a statute mile, published by the director general at Ordnance Survey office, Southampton, 1917), Thorndyke Quarry (22796) remains extant to the west of the Denny North Substation Site with Tor Wood, a Roman road and Torwood Castle to the east of the Denny North Substation Site.

7.8.28 By the Ordnance Survey mapping of 1922 (OS) (1922, Edition of 1922, Stirlingshire, Sheet XXIII, scale six inches to one statute mile, published by the director general at Ordnance Survey office, Southampton, 1922) the Denny North Substation Site and the surrounding area remained the same.

7.8.29 The Thorndyke Quarry (22796) is labelled as disused on the historical mapping of 1958 (OS) (1930 to 1957, Ordnance Survey, Stirlingshire, Sheet NS 88 SW, scale six inches to a statute mile, published by the director general of the Ordnance Survey, Chessington, surrey). The Denny North Substation Site and the surrounding landscape remained the same as on previous mapping. The historical mapping remained the same up to and including (OS) mapping of 1974 (1958 to 1974, Ordnance Survey, Sheet NS 88 SW, scale 1:10 000, published by the director general at Ordnance Survey office, Southampton, 1974).

[84] Emily A. Tracey, Luis Albornoz-Parra, Paul A. Everett & Ewan K. Hyslop (2011) An historical and geological assessment of a Scottish building stone quarry: Drumhead Quarry, Denny, available online: https://nora.nerc.ac.uk/id/eprint/17968/1/OR10033.pdf

7.8.30 Modern aerial photography shows that the Denny North Substation Site is currently a power station, with Langlands Livery to the north, Tor Wood to the east and the village of Denny to the south.

Site Visit

7.8.31 A site visit was undertaken on the 3rd November 2025. This did not identify any previously recorded assets but noted evidence of disturbance on the southern end eastern sides of the substation where works will be located. This disturbance included earthwork bunds providing screening.

7.8.32 The scheduled prehistoric dun was noted as surviving as a relatively shallow mound on the western side of the substation (SM6929). The asset was heavily overgrown and as such it was difficult to confirm its actual height/size, with the vegetation more evident than the mound.

7.8.33 The site visit confirmed that the setting of the asset had been significantly altered as a result of the existing substation, and that the Project (which is limited to works within the existing Denny North Substation) will not alter/further impact the setting of the scheduled monument.

LiDAR and Aerial Photography Review

7.8.34 A review of LiDAR data and aerial photography did not identify any assets within the Site. Furthermore, satellite images from 2016 confirmed that the area to the south and east of the existing Denny North Substation had been previously disturbed during the construction of the substation, with access tracks visible in 2015 and 2016.

Previous Archaeological Investigations

7.8.35 There have been no previous archaeological investigations within the Denny North Substation Site. A single archaeological watching brief was recorded 38 m from the Site (369726), where a spread of large oak logs with axe-dressed ends were recorded and sampled. The oak logs were dated to the Mesolithic and Neolithic periods and the axe marks dated to the Iron Age/Roman to early modern periods.

Future Baseline

7.8.36 Based on current knowledge, the future baseline is unlikely to change in the absence of the Project. Changes may occur as a result of other developments which could result in physical impacts, as well as impacts resulting from changes to the setting of assets.

7.8.37 Land use within the Study Area is likely to remain the same, and as such there is the limited potential for degradation of buried archaeological remains as most land is not actively farmed/cultivated and is rough grazing.

7.8.38 Climate change could result in impacts to cultural heritage through aspects such as erosion resulting from extreme weather events. However, the extent to which this could occur is unknown.

Archaeological Potential

7.8.39 While there is evidence for human activity recorded within the Study Area dating from the prehistoric period onwards, the Project is located within the existing Denny North

Substation which has been previously disturbed. Therefore the archaeological potential is considered to be negligible.

Embedded Mitigation Measures

7.8.40 Where possible, the Project, including all access tracks, has been designed to avoid previously recorded heritage assets, thereby avoiding the potential for physical impacts.

7.8.41 There is a single scheduled monument within the Project, this being a dun 700m north of Doghillock (SM6929). Although this scheduled monument falls within or close to areas marked for works associated with the Project, no works will take place within the scheduled monument and the asset will be fenced to protect it from accidental damage. If works are required in any of these areas, the Applicant or their Principal Contractor will need to apply for Scheduled Monument Consent (SMC) and develop an appropriate mitigation strategy should there be a direct impact on the Scheduled Monument.

Assessment of Effects

Construction Phase

7.8.42 The construction phase has the potential to result in the following impacts:

- Permanent physical impacts on previously recorded heritage assets due to the construction of Denny North Substation; and
- Permanent physical impacts on previously unrecorded heritage assets due to the construction of Denny North Substation.

7.8.43 There are no assets recorded within the area of Denny North Substation therefore the construction phase will have no physical effect on the recorded assets.

7.8.44 Furthermore, the Site is located in an area that has been previously disturbed during the construction of the Denny North Substation. As such, there is no potential for previously unrecorded assets to survive.

7.8.45 A such, no impacts resulting from the construction phase are predicted, and therefore there will be no significant effects.

Operational Phase

7.8.46 A total of one designated and three non-designated assets are recorded within the 500 m Study Area. A number of these are findspots and as such represent assets that are no longer existing *in situ*, while a number of other assets have been recorded through documentary sources and accurate grid references are not known. Furthermore, the remaining assets have no intervisibility with the Project. As such, based on the current design there are no impacts on these assets predicted, and, as a result, these assets have not been taken forward to full assessment (see Table 7-23).

Table 7-22: Assets within the Site that have been scoped out of the assessment

Receptor ID	Receptor Name	Reason Scoped Out
47047	Doghillock. Dun (Period Unassigned) (Possible), Worked Object (Shale).	Findspot which has since been removed and no longer *in situ*.

227296	Thorndyke Quarry. Quarry (Period Unassigned)	No intervisibility as located within dense woodland to the west of the Project.
369726	Torwood Mire. Unassigned, Industrial, Monument (By Form).	Prehistoric bog oak assemblage found during watching brief have since been removed and are no longer *in situ*.

7.8.47 The remaining asset recorded within the Denny North Substation area is in close proximity to the Project and may have its setting altered (Table 7-23). As a result, this asset has been taken forward to assessment.

Table 7-23: Assets within the Site that have been scoped into the assessment

Asset ID	Asset Name	Period	X	Y
SM6929	Doghillock, dun 700m N of	Prehistoric	282207	684595

Doghillock, dun 700m N of, SM6929

7.8.48 Doghillock dun, while unexcavated, has been tentatively dated to the Iron Age based on its form. The official designation statement notes that the area around the asset was previously subject to quarrying and as such there has been some damage to the monument, although the main structure appears to be largely undisturbed. Any remains that might survive as buried features may have archaeological and historical interest from the information they could hold about the development of the later prehistoric landscape. The asset is considered to be of high value (sensitivity) as a result of its scheduled status.

7.8.49 The Doghillock dun is located 24 m to the west of the Site, on the western edge of the existing Denny North Substation. The Project is located within the footprint of the existing Denny North Substation and will be of the same scale and nature. Furthermore, the Project will be located on the southern and eastern sides of the Denny North Substation, and as such is positioned at a distance from the scheduled Dun.

7.8.50 As a result, the Project will not noticeably alter the character of the area, which is largely focused on energy transmission. As such, there will be no noticeable difference to the setting of the asset and therefore the magnitude of change is considered to be 'No Change', and therefore not significant.

Summary of Significant Effects

7.8.51 Based on the current design, no significant effects are predicted.

Additional Mitigation Measures

7.8.52 The review of baseline conditions against the current design has revealed that the Project is located within an area of land that has been previously disturbed. As such, no impacts are predicted, and no mitigation is proposed.

7.8.53 An existing fence provides protection for the scheduled Doghillock Dun (SM6929), located to the west of the Project. As such, no further protection is required based on the current design. If the Project alters, and works are required near to the scheduled monument, protective fencing mitigation might be required.

Residual Effects

7.8.54 Based on the current design, no significant residual effects are predicted.

Monitoring

7.8.55 The requirement for archaeological monitoring would be agreed with Stakeholders as part of the mitigation strategy. This will be undertaken by an Archaeological Clerk of Works and include work within the immediate environs of the WHS, as well as areas of previously recorded assets.

7.9 Assessment of Effects, Mitigation and Residual Effects of the Bonnybridge Substation Extension

Introduction

7.9.2 This Section examines the potential effects and impacts on sites of archaeological and cultural heritage interest resulting from the Project at Bonnybridge Substation. Baseline data was collected for the Site as well as a 250m Study Area in order to assess the archaeological potential of the Site, as well as the potential for physical impacts on assets. A 500 m Study Area was assessed for the potential for impacts through changes to setting.

Baseline and Future Baseline Conditions

Geology, Topography, and Land Use

7.9.3 The Project is located on the southern and western sides of the existing Bonnybridge Substation (centred on NGR NS 84082 80959), approximately 1.5km northeast of the settlement of Bonnybridge (Figure 7.11).

7.9.4 The superficial geology at the Project site is dominated by raised marine deposits consisting of clay, silt, sand, and gravel. To the east of the Project, on the higher ground, is an island of glaciofluvial ice contact deposits. These deposits overlie sedimentary bedrock of the Passage Formation of the Clackmannan Group type.

7.9.5 Mapping from the Ordnance Survey (OS) indicates the Project to be situated at approximately 30m Above Ordnance Datum (AOD), with the land falling from the east to west, and steeply to the north toward the River Carron tributary.

7.9.6 The landscape at the Project is characterised by the presence of industrial, commercial and power distribution infrastructure, and rectilinear field boundaries typical of agricultural improvements since the 1700s, with areas of scrub woodland. The land to the northwest of the site is occupied by a sewage treatment plant and photovoltaic panels.

Designated Assets

7.9.7 There are no designated heritage assets either within the Site. There is one WHS buffer and two scheduled monuments within the Study Area.

7.9.8 The Antonine WHS buffer (WHB1) lies approximately 85m south of the Bonnybridge Substation.

7.9.9 There are two designated assets within the wider 500m Study Area adopted for the assessment of impacts on setting. These consist of scheduled monuments of prehistoric

date, comprising a ring ditch settlement 450m south-south-west of Wester Carmuirs (SM6413), approximately 480m south-east of the Site; and the scheduled post-medieval Forth and Clyde Canal: Castlecary - M9 Motorway (SM6768), situated approximately 380m south of the Site.

Non-designated Assets

7.9.10 There are no non-designated heritage assets recorded within the Site, although there is one non-designated asset (of modern date) within the 250m Study Area. This comprises the Bonnybridge Power Station (105789).

7.9.11 Previously recorded heritage assets in the Study Area are discussed by period below.

Prehistoric – Palaeolithic to Bronze Age (40,000BC to 800BC)[85]

7.9.12 During the Palaeolithic, Scotland's climate was dominated by the end of the Ice Age with periods of extreme cold, such as the Younger Dryas, characterised by the local development of ice caps and valley glaciers as well as the development of permafrost[86]. The early prehistoric period, from the Palaeolithic to Mesolithic periods, saw significant changes. The Palaeolithic period saw the development of social structures and stone tools, whilst during the Mesolithic period there was a transition to a warmer climate with a continuation of the hunter-gatherer lifestyle. This then culminated in the Neolithic with the development of agriculture and more permanent settlements [87].

7.9.13 The Chalcolithic and Bronze Age in Scotland (c. 2450-800 BC) is defined by the introduction and use of copper and bronze, which enabled trade and interaction with other parts of Britain and Europe. This period also saw significant social, economic, and cultural changes, including a change in social stratification, regional diversity, and increased interaction[88].

7.9.14 There are no prehistoric assets recorded on the NRHE within the Bonnybridge Substation Extension Site itself or the wider Study Area.

Iron Age and Roman (800BC to AD400)

7.9.15 There are no Iron Age assets recorded on the NRHE within the Site or the 250 m Study Area. However, within the wider setting Study Area (500 m) there is a Scheduled Monument (SM6413) located approximately 480m south-east of the Site. This comprises a ring ditch with an entrance on the eastern side, which was identified as a timber roundhouse, alongside a number of scattered pits, including a cluster around a former watercourse. A larger identified ring ditch may also represent the remains of a further structure.

[85] Due to the varied nature of the Scottish landscape, and the resulting variations in settlement/land use, there is no agreed chronology at a national level. As such, the dates that have been assigned to the various periods for the baseline study are those set out in the Scottish Archaeological Research Framework (ScARF) available at Panel Reports Chronology and Downloads | The Scottish Archaeological Research Framework.
[86] Scottish Archaeological Research Framework, available online: https://scarf.scot/thematic/scarf-science-panel-report/4-people-and-the-environment/4-8-palaeoclimatology/
[87] Bell and Walker (2005) Introduction to the Palaeolithic and Mesolithic Periods available online: https://scarf.scot/national/palaeolithic-mesolithic-panel-report/1-introduction-to-the-palaeolithic-and-mesolithic-periods/
[88]Scottish Archaeological Research Framework, available online: https://scarf.scot/national/scarf-bronze-age-panel-report/executive-summary-5/

7.9.16 Roman influence in Scotland varied across the country, as while the Roman armies campaigned as far north as the Moray Firth, the country was never fully conquered, or part of the Empire for a prolonged period of time. Julius Agricola began his military campaigns in what is now Scotland in the AD 70s, resulting in the first Roman territorial conquest in the region. By the mid AD 80s, after a period of military occupation and fort building, including ones that would later become the line of the Antonine Wall, Roman troops were withdrawn. Around AD 122, Emperor Hadrian consolidated the frontier to a line between the Tyne and Solway rivers.

7.9.17 Later, Antoninus Pius built a new wall, the Antonine Wall, further north, beginning around AD 140. The wall was both a physical barrier and a symbol of the Roman Empire's power and control. However, the wall was abandoned around AD 165, and the forts were destroyed, with troops retreating south to reoccupy Hadrian's Wall[89].

7.9.18 The Antonine Wall, which forms part of the Frontiers of the Roman Empire World Heritage Site, runs for 40 Roman miles (60km) from modern Bo'ness, on the Firth of Forth, to Old Kilpatrick on the River Clyde. At the time it was built, the wall was the most complex frontier ever constructed by the Roman army[90].

7.9.19 The Antonine Wall WHS buffer (WHB1) lies 85 m from the Bonnybridge Substation Extension Site. The closest scheduled component of the Wall to the Project is titled 'Antonine Wall, Rough Castle Fort, Annexe and Military Way' (SM90013) and this is located approximately 1km to the south of the Site. The wall was composed of a turf rampart fronted by a wide and deep ditch. Forts and fortlets along the wall housed the troops stationed at the frontier.

7.9.20 Within the wider area there are various indications of Roman activity, such as Wester Carmuirs Roman Camp (SM3188), located 1.01 km from Bonnybridge Substation Extension Site, Househill Enclosure and Part of Roman Camp (SM6483), located 1.14 km from the Site and Lochlands Roman Camps (SM4259), located 1.30 km from the Site. The latter comprises the remains of a series of at least 10-12 Roman temporary camps, there are no other complexes of this kind in Scotland, as the camps were built and used at intervals throughout the Roman occupation of Scotland, from at least the 1st to the 3rd centuries AD[91].

Medieval (AD400 to AD1500)

7.9.21 Medieval Bonnybridge was a rural settlement and Piers Dixon (2003) suggests that the landscape was dominated by nucleated villages and unenclosed arable fields in this period.[92] The gradual feudalisation of Scotland in the 12th and 13th centuries, which was led by King David and his successor kings, eased the spread of row settlement and unenclosed runrig across the rest of lowland Scotland.[93]

[89] The Antonine Wall, 2025, available online: https://www.antoninewall.org/about-the-antonine-wall/the-romans-in-scotland
[90] Historic Environment Scotland, available online: https://www.historicenvironment.scot/advice-and-support/listing-scheduling-and-designations/world-heritage-sites/antonine-wall/
[91] Ancient Monuments, available online: https://ancientmonuments.uk/121425-lochlands-roman-camps-bonnybridge-and-larbert-ward
[92] Historic Scotland (2003), Medieval or later rural in Scotland: 10 years on, Medieval or Later Rural Settlement: Historic Scotland's Approach | HES P.53
[93] Historic Scotland (2003), Medieval or later rural in Scotland: 10 years on, Medieval or Later Rural Settlement: Historic Scotland's Approach | HES P.54

7.9.22 While there are no assets dating to the medieval period within the Site itself or the Study Area, place name evidence suggests that the landscape was being exploited or settled at this time. Johnson suggests that Bonny derives from the Galiec *buinne* meaning rapid stream. This also links with the Old Welsh *buan* meaning swift river. The evidence would, however, suggest that the Site was located outside of the main focus of settlement, and was agricultural land.

Post-Medieval (AD1500 to AD1900)

7.9.23 No previously recorded assets have been identified within the Study Area, with a review of baseline information collected as part of the assessment suggesting that the Site was used as agricultural land for most of the period.

7.9.24 During much of the post-medieval period, the main focus of settlement appears to have been outside of the Study Area in the lager towns of Falkirk, approximately 5km to the southeast, and Denny approximately 3km to the northwest. In 1600 there was a mill being built to the east of Castle Cary, however, no bridge is recorded at this time[94]. Bonnybridge was first referred to as the "Ford of Bonny" in 1648, with the south side of the River Bonny called Bonnywater and the north side called Water of Bonny.

7.9.25 The modern name, 'Bonie bridge', appeared in 1750, suggesting that a bridge had been constructed by that time[95], although this is assumed to have been near the historic core of the settlement, approximately 1.5km to the southwest of the Site. There were at least four mills recorded to the south near the settlement from which four roads radiated. By the 1770s the Forth and Clyde Canal had also been constructed, forming a key infrastructure route linking the Forth in the east to the Clyde in the west[96]. This is now a scheduled monument (SM6768).

7.9.26 Early County Surveys of the Study Area provide limited information regarding land use due to their scale. However, they show a rough settlement pattern that largely mirrors the modern settlement layout, with a focus on the lower lying areas along the River Carron and the Bonny Water to the west.

7.9.27 The first detailed survey depicting the landscape of the Study Area is the General Roy Survey dating to the mid-18th century[97]. This shows the landscape of the Carron Valley, in which the Site is located, as arable land. The settlement pattern on the Roy Survey can also be traced in the contemporary landscape, with most settlement names remaining relatively unchanged. This includes the settlements of Dunipace and Househill to the west, as well as the farmsteads of *West Carmuir* (Wester Carmuirs) and *Boggton* (Bogton) to the east and northeast respectively.

7.9.28 The first detailed mapping for the Site dates to the mid-19th century when the Ordnance Survey produced their first surveys. By the time of the 1st Edition OS map of 1860 (1860, *Ordnance Survey,* Stirlingshire, Sheet XXX, scale six inches to one statute mile, published by Colonel Sir H. James 1864), the Site is depicted as an open field, with a Sand Pit and the

[94] Robin Smith (2001) The making of Scotland: A comprehensive guide to the growth of its cities, towns and villages
[95] Robin Smith (2001) The making of Scotland: A comprehensive guide to the growth of its cities, towns and villages
[96] Robin Smith (2001) The making of Scotland: A comprehensive guide to the growth of its cities, towns and villages
[97] General Roy Survey available at Georeferenced Maps viewer - Map images - National Library of Scotland, accessed 22nd November 2025.

Caledonian Railway situated to the south. The surrounding area is similar to the present day, with Bonny Water and Falkirk Road on the same alignment.

7.9.29 On the 2nd Edition 1896 OS map (1896, *second edition 1897,* Stirlingshire, Sheet XXX.I. scale 25.344 inches to a Statute Mile, published by Ordnance Survey office, Southampton, 1897), the Site remains unchanged, apart from the Caledonian Railway which has been extended to include the Denny Branch and Kilsyth and Bonny Bridge Railway, built to the north of the existing Bonnybridge Substation.

7.9.30 There are no post-medieval assets recorded on the NRHE within the Bonnybridge Substation Extension Site itself, or within the 250 m Study Area. However, within the setting Study Area (500 m), the scheduled Forth and Clyde Canal: Castlecary - M9 Motorway (SM6768) is located 379m from the Site. Built between 1768 and 1790, the canal was Scotland's first major inland waterway, earning its name as 'The Great Canal' and demonstrating its importance even during its construction[98].

Modern (AD1900 to Present)

7.9.31 There is a single asset recorded for the modern period – Bonnybridge Power Station (105789) – on which parts of the existing Bonnybridge Substation are located. It was built in 1910 and was coal-fired, with the complex straddling the Denny Branch Railway Line which was located within the Site. The power station was extended at various stages throughout the mid-20th century until the late 1960s, when it was decommissioned, with the site demolished in the mid-1970s.

7.9.32 The Bonnybridge Power Station is first depicted on the OS map of 1913 (1913, Edition of 1921, Stirlingshire, Sheet XXX, scale six inches to one Statute Mile, published by the direct general at the Ordnance Survey office, Southampton), to the east of the Site, as well as a ford being situated to the west. By the time of the 1943 OS map (1943, Revision of 1943, Stirlingshire, Sheet XXX.1, scale 25.344 inches to a Statute Mile, published the direct general at the Ordnance Survey office, Southampton), the power station has been extended to include a water cooling tower, as well as further buildings and an area of hardstanding. RAF photos taken in 1943 show the main cooling tower within the area of the existing Bonnybridge Substation[99]. The 1943 aerial photos also show the Site as part of a larger arable field. Subsequent aerial photographs from 1949 show further extensions to the power station complex, with a large substation added in the area of the existing Bonnybridge Substation[100].

7.9.33 By the time of the 1967 OS map (1967*,* Ordnance Survey, Stirlingshire, Sheet NS 88 SW, scale 1 square inch to 17.778 acres, published by the director general of the Ordnance Survey, Chessington, Surrey, 1967), the power station has been further extended to include an additional water cooling tower and the access road has been extended to the west, with additional buildings along the road. There is no further mapping of the Bonnybridge Substation Extension Site, however, ariel photography from the later 20th

[98] Ancient Monuments, available online: https://ancientmonuments.uk/120347-forth-and-clyde-canal-castlecary-m9-motorway-bonnybridge-and-larbert-ward
[99] Aerial photos available at Image Details - Air Photo Finder - NCAP, accessed 25th November 2025.
[100] Aerial photos available at SAR011187 SCOTLAND (1949). Bonnybridge Power Station Falkirk, Stirlingshire, Scotland. An oblique aerial photograph taken facing South/West. This image was marked by AeroPictorial Ltd for photo editing. | Britain From Above, accessed 25th November 2025.

century show the Site as being used for agriculture. It is possible, however, that the land within the Site has been previously used for compounds, linked to the construction of the various Bonnybridge power station extensions.

Site Visit

7.9.34 An archaeological site visit was undertaken on the 3rd November 2025 (see **Appendix 7.2: Site Photographs** for general site photos). This included visits to the Site, as well as the surrounding landscape to examine possible impacts on the setting of heritage assets.

7.9.35 The site visit did not record any previously unrecorded assets, with the western area of the Site used for arable cultivation, while the two southern fields were under grass.

7.9.36 The site visits also noted that the existing Bonnybridge Substation is well screened in the landscape, with views of the infrastructure limited. This is largely a result of the undulating topography, as well as trees/vegetation which appear to have been planted to further enhance existing woodland, such as the blocks of trees that flank the Bonny Water and the Rowan Tree Burn to the west.

LiDAR and Aerial Photography Review

7.9.37 A review of LiDAR data and aerial photography did not record any previously unrecorded assets.

7.9.38 Aerial photographs from the early 1940s onwards provide some information regarding the development of the former Bonnybridge Power Station that occupied large areas of the existing Substation. While these do not show the existing Substation or former power station as extending into the Site, it is possible that the land within the Site was used during construction, due to the limited space available around what would have been an extensive construction site.

7.9.39 LiDAR data suggests some disturbance or possible levelling in the southern section of the Site (i.e. between the existing Substation and the A803), although this is not certain.

Previous Archaeological Investigations

7.9.40 There have been no previous archaeological investigations within the Bonnybridge Substation Extension Site, or the wider Study Area recorded on the NRHE.

Future Baseline

7.9.41 Based on current knowledge, the future baseline is unlikely to change in the absence of the Project. Changes may occur as a result of other developments which could result in physical impacts, as well as impacts resulting from changes to the setting of assets.

7.9.42 Land use within the Study Area is likely to remain the same, and as such there is the potential for some degradation of buried archaeological remains in areas of arable cultivation.

7.9.43 Climate change could result in impacts to cultural heritage through aspects such as erosion resulting from extreme weather events. However, the extent to which this could occur is unknown.

Archaeological Potential

7.9.44 While there is evidence for human activity from the prehistoric period onwards within the Study Area and immediate surroundings, there are no previously recorded assets within the Site with the exception of the former Power Station.

7.9.45 Analysis of historical mapping and aerial photographs both suggest ground disturbance resulting from the constriction of the former power station, as well as the existing Bonnybridge Substation, while modern agriculture may also have truncated any archaeological remains that may have existed. The archaeological site visit also failed to identify any new heritage assets.

7.9.46 As a result, the potential for archaeological remains dating to all periods to survive within the Site is considered to be low and remains that are identified are likely to be of local importance, and therefore of low value (significance).

Embedded Mitigation Measures

7.9.47 As no previously recorded assets have been recorded within the Site, no embedded mitigation measures, such as avoidance through design, are proposed.

Assessment of Effects

Construction Phase

7.9.48 The construction phase has the potential to result in the following impacts:

- Permanent physical impacts on previously unrecorded heritage assets due to the construction of Bonnybridge Substation.

7.9.49 There are no previously recorded heritage assets within the Site and therefore the construction phase will have no physical impacts on recorded heritage assets.

7.9.50 The potential for previously unrecorded assets to survive within the Site is considered to be low based on baseline conditions as well as the possibility that the Site has been disturbed by the construction of the current substation and agricultural activities. It is also assumed that the scale of the Project will mean that any previously recorded assets that are identified will not be fully removed. Based on a worst-case scenario, the partial loss of an asset would result in a medium magnitude of change. On an asset of low value, this would result in a minor significance of effect. This is not considered significant in EIA terms.

Operational Phase

7.9.51 Due to the nature of the Project, impacts resulting from the Operational Phase are limited to potential changes to the setting of heritage assets. A review of ZTV data, as well as the site visit, noted that the potential for significant impacts on heritage assets resulting from changes to their setting was limited as a result of screening from topography and woodland, as well as the distance between assets and the Site. Furthermore, the proximity of the Project to the existing Bonnybridge Substation will mean that the general character of the area will not change or alter. This is largely a result of positioning the new infrastructure adjacent to the western boundary of the existing Bonnybridge Substation, as well as the general height of the Project not exceeding the height of the existing infrastructure.

7.9.52 As a result, no significant effects are predicted from the Operational phase of the Project.

Summary of Significant Effects

7.9.53 No significant effects have been identified from the Construction or Operational phases.

Additional Mitigation Measures

7.9.54 The review of baseline information has suggested that most of the Site is likely to have been disturbed as a result of the construction of the former Bonnybridge Power Station, as well as the existing Bonnybridge Substation and arable cultivation. This has, however, not been confirmed by evaluation trenching. As such, evaluation trenching will be undertaken in advance of construction.

7.9.55 If previously unrecorded archaeological features are identified, mitigation may include, but not be limited to, archaeological excavation, strip, map, and record, and archaeological monitoring.

7.9.56 While significant impacts on the setting of heritage assets have not been identified, landscape mitigation in the form of woodland planting, to supplement existing woodland belts, will help screen the Project and reduce its visual appearance.

7.9.57 All mitigation works will be agreed with the relevant Local Authority Archaeological Advisor once full details of the construction works have been agreed and prior to works commencing.

Residual Effects

7.9.58 Based on the design, no significant residual effects are predicted.

Monitoring

7.9.59 The requirement for archaeological monitoring would be agreed with Stakeholders as part of a mitigation strategy. This willbe undertaken by an Archaeological Clerk of Works, and include any areas where archaeological remains are encountered (if they are encountered at the evaluation stage).

7.10 Assessment of Effects, Mitigation and Residual Effects of the Cumbernauld Substation Extension

Introduction

7.10.2 This chapter examines the potential impacts and effects on sites of archaeological and cultural heritage interest resulting from the Project. Baseline data was collected for the Site, as well as a 250m Study Area, in order to assess the archaeological potential of the Site. A 500 m study area was also used to examine the potential for impacts to the value of assets through changes to setting.

Baseline and Future Baseline Conditions

Geology, Topography, and Land Use

7.10.3 The Project is located on land directly adjacent to the existing Cumbernauld Substation (centred on NGR NS 77460 74388), on the eastern side of the settlement of Cumbernauld (Figure 7.1).

7.10.4 The superficial geology at the ProjectDevelopment Site is dominated by till deposits. These deposits overlie sedimentary bedrock of the Clackmannan group type, predominantly indicated to be of the Upper Limestone formation, with Passage Formation found across the east of the Site.

7.10.5 Mapping from the Ordnance Survey (OS) indicates the ProjectDevelopment Site to be situated at approximately 122m Above Ordnance Datum (AOD) with the land falling from east to west.

7.10.6 Current land use within the Site is dominated by woodland and scrub which forms part of the Forest Wood Nature Reserve. The woodland areas that form the wider nature reserve contain some blocks of designated Ancient Woodland. The woodland within the Site largely consists of conifers and some limited broadleaf woodland planted in the early 1990s[101].

7.10.7 As indicated by the Historic Landscape Assessment mapping, the landscape at the Project Development Site is characterised partly by the suburban landscape of Cumbernauld New Town to the north and west and the mixed woodland plantation within the Site, to its north, east, and south, with areas of former rectilinear enclosure of rough grazing land to the east.

Designated Assets

7.10.8 There are no designated heritage assets either within the Site or the 500m Study Area.

Non-designated Historic Environment Assets

7.10.9 There are no non-designated historic environment assets recorded within the Site, and nine non-designated historic environment assets within the 250m Study Area. Of these, five date to the post-medieval period, while three date to the modern period and are linked to the development of Cumbernauld in the post-war period. These later assets comprise a block of flats on Laburnam Road (348771), a dragon mural on a housing estate also on Laburnam Road (348769) and Cumbernauld High School on the Kildrum Road (207220). There is a further non-designated historic environment asset of unknown date which comprises a pond (124445).

Prehistoric – Palaeolithic to Bronze Age (40,000BC to 800BC)[102]

7.10.10 There are no assets dating to the prehistoric period within the Study Area. The early prehistoric, from the Palaeolithic to Mesolithic periods, saw significant changes both socially and culturally. The Palaeolithic period saw Scotland's climate dominated by the end of the Ice Age with periods of extreme cold, such as the Younger Dryas. Characterised by the local development of ice caps and valley glaciers and the development of permafrost[103]. There were also changes to lithic technologies, with the development of different stone tools and adaptation to hunting practices as the climate warmed.

[101] Scottish Government (n.d.) *Cumbernauld Forest Wood: Exploring the Perceived Impacts of Different Management Interventions on Woodland Benefits,* available at: Cumbernauld_Forest_Wood.pdf, accessed 24th November 2025.
[102] Due to the varied nature of the Scottish landscape, and the resulting variations in settlement/land use, there is no agreed chronology at a national level. As such, the dates that have been assigned to the various periods for the baseline study are those set out in the Scottish Archaeological Research Framework (ScARF) available at Panel Reports Chronology and Downloads | The Scottish Archaeological Research Framework.
[103] Scottish Archaeological Research Framework, available online: https://scarf.scot/thematic/scarf-science-panel-report/4-people-and-the-environment/4-8-palaeoclimatology/

7.10.11 By the Mesolithic period there was a transition to a warmer climate which resulted in more areas of Scotland being suitable for occupation on a seasonal basis, with a continuation of the hunter-gatherer lifestyle. Inland areas such as rivers would have been exploited by these transient people, and as such the upper reaches of the Luggie Water, located to the south of the Study Area, would have represented a good landscape for hunting. However, most evidence for activity during the Mesolithic period is limited to lithic scatters, and as such, evidence of activity can be limited if the land has not been subject to arable cultivation or been the subject of previous archaeological fieldwork.

7.10.12 In the Neolithic, there was a transition from hunter-gatherer activities to settled farming activities and agriculture and permanent settlements became increasingly common. This period also saw changes to climatic conditions and ecological shifts[104]. While remains of settlement activity dating to this period in most regions of Scotland is limited, and largely limited to lithic scatters, the period marks the introduction of large ritual monuments and sites associated with the burial/commemoration of the dead. These assets are, however, once again limited in North Lanarkshire and west central Scotland[105], although this absence may also be the result of an absence of previous archaeological fieldwork.

7.10.13 This absence of evidence within the Study Area continues into the Bronze Age. The Bronze Age in Scotland (*c.* 2450-800 BC) is defined by the introduction and use of copper and bronze, with evidence of trade and interaction with other parts of Britain and Europe. This period also saw significant social, economic, and cultural changes, including a change in social stratification, regional diversity, and increased communications[106].

Iron Age and Roman (800BC to AD400)

7.10.14 There are no previously recorded heritage assets dating to the Iron Age and Roman period within the Study Area.

7.10.15 Iron Age studies in Scotland have traditionally focused heavily on settlements, particularly those in northern and western Scotland, with sites like brochs, duns, and hillforts providing detailed insights into architectural and societal developments. However, recent discoveries of funerary evidence, such as an assembled chariot located at Newbridge, west of Edinburgh, are shifting the focus to better understand the population itself during this period[107]. It is likely that the Study Area was exploited during the Iron Age, with the undulating landscape of the upper reaches of the Luggie Water representing a suitable location for agriculture. However, a lack of previous archaeological fieldwork could be partially to blame for a lack of Iron Age assets within the area, rather than a definite absence of activity.

7.10.16 The earliest evidence of Roman campaigns in Scotland began in the 70s AD under the emperor Vespasian and his sons, the governor Agricola. By both land and sea, it took him only seven years to take Rome's first conquest of territories in Scotland. To solidify their

[104] Bell and Walker (2005) Introduction to the Palaeolithic and Mesolithic Periods available online: https://scarf.scot/national/palaeolithic-mesolithic-panel-report/1-introduction-to-the-palaeolithic-and-mesolithic-periods/
[105] Noble, G. () The Neolithic, available at 03_Neolithic.pdf, accessed 24th November 2025.
[106] Scottish Archaeological Research Framework, available online: https://scarf.scot/national/scarf-bronze-age-panel-report/executive-summary-5/
[107] Scottish Archaeological Research Framework, available online: https://scarf.scot/national/iron-age-panel-report/1-introduction-4/

position, some forts were built including ones that would later become the line of the Antonine Wall located approximately km north of the Study Area[108].

7.10.17 There are no Roman assets recorded on the NRHE within the Site or the Study Area. However, approximately 3.25 km north of the Site, a Roman Fort connecting to the Antonine Wall (SM90017) is situated, consisting of the rampart, the ditch, the berm (area between rampart and ditch), the upcast mound and the Military Way.

Medieval (AD400 to AD1500)

7.10.18 There are no assets dating to the medieval period within the Study Area.

7.10.19 Medieval Scotland saw the transition from a largely Iron Age society, to a feudal one, with the rise and fall of various kingdoms, finally unifying in the Kingdom of Alba in the 9th century. After the Norman conquest and the regain of the western seaboard in the 12th and 13th centuries, Scotland fought for and re-established independence from England. The Stewart Dynasty in the 15th century consolidated royal power and national territory but were defeated at the Battle of Flodden in 1513.

7.10.20 The Site is located within the area of Kingdom of Strathclyde, who were descended from the native Iron Age peoples of the area known as the Damnoni (Watson 1926, 15). Alone among all the Northern British kingdoms, the Kingdom of Strathclyde withstood the incoming Anglo-Saxons in the early part of the period, and it was the only kingdom to retain its independence until the end of the Early Historic era (c. AD 1100).[109]

7.10.21 While there are no assets dating to the medieval period within the Site itself or the Study Area, place name evidence suggests that the landscape was being exploited or settled at this time. Johnson notes that Cumbernauld is recorded from at least the early fourteenth century[110], however, the settlement was focused further to the west, in the area of the current town. As such, the landscape of the Study Area would have represented agricultural land rather than being part of the settlement. Based on the topography, it is likely that the western section of the Study Area would have been agricultural land on the edge of the town, while the higher, more marginal land, on the eastern section of the Study Area, would have been marginal land on the fringes of the Fannyside Moss, which may have been used for grazing.

Post-Medieval (AD1500 to AD1900)

7.10.22 A total of five assets dating to the post-medieval period have been recorded within the Study Area as part of a review of historic mapping. These include two assets linked to agriculture (AECOM050 and AECOM051), as well as two linked to industrial activities (AECOM052 and AECOM054).

7.10.23 Early County Surveys of the Study Area provide limited information regarding land use due to their scale. However, they show a rough settlement pattern that largely corresponds with the modern settlement pattern, with a focus on the lower lying areas along the River Kelvin to the west, and the Luggie Water to the southwest.

[108] The Antonine Wall (2025) available online: https://www.antoninewall.org/about-the-antonine-wall/the-romans-in-scotland
[109] Stephen T Driscoll (2014) In Search of the Northern Britons in the Early Historic Era (AD 400–1100), available online: https://scarf.scot/wp-content/uploads/sites/15/2022/04/06_NorthBritons.pdf
[110] Johnston, J. B. (1970) *Place-Names of Scotland*, Wakefield, S. R. Publishers.

7.10.24 The first detailed survey of the Study Area is the General Roy Survey dating to the mid-18th century[111]. This shows the land use and settlement pattern largely corresponding to that which survives in the contemporary rural landscape of North Lanarkshire, with nucleated farmsteads within a mixed agricultural landscape. The steep sided valley of the Vault Glen, located to the west of the Study Area, is depicted as a wooded valley, while the area of the Site is shown as unimproved moorland, with the areas of arable focused on the lower lying ground. The former farmstead of West Forest (AECOM050) is depicted to the east of the Site, with at least one structure visible. The farmstead appears to be associated with two enclosures which encompass an area of unimproved or semi-improved grazing, with no arable land noted.

7.10.25 The first detailed representation of the Study Area dates to the middle of the 19th century, when the Ordnance Survey produced their first mapping. Historical mapping dating to 1859 (OS) (1859, *Dumbartonshire*, sheet XXVI, scale six inches to one statute mile, published by Colonel Sir H. James, 1864) the Site as agricultural fields, with West Forest Farmstead recorded to the east (AECOM050). A small structure, possibly a field barn or similar, is also recorded to the northwest of the Site (AECOM051). A small enclosure was also noted on LiDAR data for the area, although this does not appear to be depicted on the mapping (AECOM054).

7.10.26 Improvements to the regions transport is visible in the area surrounding the Site with the Castle Cary Branch of the Caledonian Railway to the northwest, and this line continues to operate. The wider area comprises of Cumbernauld and North Wood, to the east of the new Cumbernauld substation extension, with agricultural fields and farmsteads to the north, south and west.

7.10.27 On the Second Edition OS map (1896, *Second Edition 1898*, sheet XXXIV.3, scale 25.344 Inches to a Statute Mile, published by Ordnance Survey office, Southampton, 1898) there was no change to the Site from the previous map, with the only change noted being the addition of a quarry (named as 'old quarry'), depicted to the south of the Site (AECOM052), while 'old levels' are also noted to the southwest, suggesting quarrying and mining were taking place. The survey also suggests that there had been an extension of the forest planation in the area around the Site, while the small structure (AECOM051) noted on the First Editon Ordnance Survey mapping is no longer recorded.

Modern (AD1900 to Present)

7.10.28 Three assets dating to the modern period have been identified within the Study Area, all of which are associated with the development of Cumbernauld.

7.10.29 On the 1914 OS map (1911, *Ordnance Survey* of 1914, sheet III.N.W, scale six inches to one statute mile, published by the Director General at the Ordnance Survey Office, Southampton) the Site was located within plot 357, labelled as Old Level, perhaps relating to the quarry to the south. There is also some development towards the west of the study area, including green yards cottages, old limekiln, Cumbernauld station and Cumbernauld brick and sewage works.

[111] General Roy Survey available at Georeferenced Maps viewer - Map images - National Library of Scotland, accessed 22nd November 2025.

7.10.30 OS mapping dating to 1967 (OS) (1967, *Ordnance Survey*, sheet NS 7774 NE, scale 50.688 inches to 1 mile, published by the Director General of the Ordnance Survey, Surrey, 1967) illustrates the post-Second World War development of Cumbernauld, and shows seven blocks of flats and associated stairwells on Laburnum Road, located 173 m from the new Cumbernauld substation extension (348771). There are seven blocks depicted on the mapping with associated stairwells. Also located on Laburnum Road, approximately 212 m from the new Cumbernauld substation extension is an art mural of a dragon (348769).

7.10.31 The post-war expansion of the town also included the need for new public buildings, including schools. This included Cumbernauld High School (207220), now Cumbernauld Academy, opened in 1964 as a non-denominational, co-educational secondary school in Cumbernauld New Town. This is confirmed on the OS map of 1967 (1967, *Ordnance Survey*, sheet NS 7774 NW, scale 50.688 to 1 mile, published by director general of ordnance survey, Chessington, surrey, 1967). The school's original design was by Scottish architects Gratton & McLean. Cumbernauld High School was a key part of the new town's development, providing education for the growing population[112].

7.10.32 The 1973 OS map (1930-1972, *Ordnance Survey*, sheet NS 77 SE, scale six inches to one statute mile, published by crown copyright 1957) depicts Cumbernauld Brugh as developing, with Kildrum South Roundabout and the B8054, situated to the north of the Site, and the B8039 to the northwest. However, the current suburban terrace housing, to the north of the Site, is not extant on the mapping.

7.10.33 Aerial photography shows the Site is currently a substation with Forest Road to the north and Glencryan Woodland to the north, south, east and west.

Site Visit

7.10.34 A Site Visit was undertaken between the 4th November 2025 (see Appendix 7.2 for general site photos). The purpose of this visit was to view the existing Substation in the landscape and assess whether the extension of the substation would result in significant physical impacts on heritage assets or result in changes to their setting which affected their value. Weather conditions varied from overcast with low cloud to heavy rain, but in general the conditions allowed good views of the landscape.

7.10.35 No previously unrecorded assets were noted during the site visit, with the area of the Project occupied by mixed woodland and scrub. The site visit also noted that the existing woodland provides extensive screening on most sides, while the industrial fringes of Cumbernauld to the northeast, north, and northwest also provide screening from the limited number of listed buildings which are located within the centre of Cumbernauld itself.

7.10.36 The Site visit also involved examining a access track for the works, which was found to be an already established trackway and, therefore, no additional impacts are likely to occur to assets.

LiDAR and Aerial Photography

7.10.37 A review of LiDAR data noted that large areas of the Study Area, that are now occupied by woodland, appear to have been subject to previous disturbance. The platform on which

[112] The Gazetteer for Scotland (2022) available online: https://www.scottish-places.info/features/featurefirst92081.html

the existing Cumberland Substation is constructed is visible, with possible quarrying to the south. Other features include a possible small enclosure adjacent to a former field boundary (AECOM054).

7.10.38 No new assets were recorded as part of a review of aerial photographs, with the images from the second half of the 20th century demonstrating the expansion of Cumbernauld to the north, as well as the reforestation of the landscape surrounding the Site.

Previous Archaeological Investigations

7.10.39 There has been a single archaeological investigation recorded on NRHE (124445) carried out by the staff of West of Scotland Archaeology Service. Investigations were conducted 238 m from the new Cumbernauld substation extension, and a former pond of uncertain date was identified.

Future Baseline

7.10.40 Based on current knowledge, the future baseline is unlikely to change in the absence of the Project. Changes may occur as a result of other developments which could result in physical imapcts, as well as imapcts resulting from changes to the setting of assets.

7.10.41 Land use within the Study Area is likely to remain the same, and as such there is the potential for some degradation of buried archaeological remains in areas of woodland if commercial forestry operations are undertaken (current woodland appears to be mixed use).

7.10.42 Climate change could result in impacts to cultural heritage through aspects such as erosion resulting from extreme weather events. However, the extent to which this could occur is unknown.

Archaeological Potential

7.10.43 There are no previously recorded assets within the Study Area from the prehistoric period through to the medieval period, with the only assets recorded dating to the post-medieval and modern periods. The general topography of the Site, on the eastern side of a river valley, would suggest it would have represented an attractive area to hunter-gatherers from the early prehistoric period. However, its positioning on the edge of a moss may have resulted in it being less suitable for permanent settlement from the later prehistoric period onwards.

7.10.44 Mapping from the 18th century further suggest the Site remained relatively undeveloped, with arable agriculture focused on the lower lying areas, and as such the Site appears to have been used for marginal grazing and woodland, possibly associated with Wet Forest Farm, since at least the 18th century.

7.10.45 The Site walkover further confirmed there are no features of potential heritage interest within the Site. Based on the review of previously recorded assets, as well as a review of historic mapping, the potential for the discovery of previously unrecorded assets, dating from the prehistoric period to the medieval period, is considered to be negligible. Any remains from these periods that are identified are likely to be of local importance only, and therefore of Low Value (sensitivity).

7.10.46 Historic mapping would suggest that agricultural and mining/quarrying was taking place during the post-medieval period, and as such the archaeological potential for this period is considered to be low. Any remains from these periods that are identified are also likely to be of local importance only, and therefore of Low Value (sensitivity).

Embedded Mitigation Measures

7.10.47 No previously recorded assets were identified within the Site, and as such no embedded mitigation (such as micro-siting to avoid assets) is proposed.

Assessment of Effects

7.10.48 The cultural heritage baseline of the Study Area has been assessed against the Project determine likely significant effects. Only those assets which have the potential to be affected, either as a result of physical impacts or through changes to setting, are assessed below. All other assets are considered to be unaffected by the Project.

Construction Phase

7.10.49 The construction phase has the potential to result in the following impacts:

- Permanent physical impacts on previously recorded historic environment assets due to the construction of Cumbernauld Substation Extension.
- Permanent physical impacts on previously unrecorded historic environment assets due to the construction of Cumbernauld Substation Extension.

7.10.50 There are no assets within the area of Cumbernauld Substation Extension, therefore, potential impacts are limited to previously unrecorded assets.

7.10.51 As noted in the 'Archaeological Potential Section' above, the archaeological potential for all periods is considered to be low or negligible due to aspects such as the marginal nature of the landscape, the lack of previously recorded assets, and previous ground disturbance. The value of any previously recorded assets that might be identified is assumed to be low for all periods.

7.10.52 A worst-case scenario has been adopted for the assessment of potential impacts on previously unrecorded assets, and as a result it is assumed that the Project could result in the total loss of previously unrecorded assets of low value. This would result in a Moderate Adverse Significance of Effect. However, it should be noted that the potential for identifying previously recorded assets is considered to be low, and there is potential that assets could be avoided, either fully or partially, and therefore significant effects are considered highly unlikely to occur.

Operational Phase

7.10.53 Due to the nature of the Project, operational impacts will be limited to changes to the setting of heritage assets that may affect their value.

A review of assets within the Wider Study Area adopted for setting impacts was undertaken alongside a review of ZTV data produced as part of the LVIA assessment, as well as a site visit. This confirmed that there was no potential for significant impacts on the setting of heritage assets with no designed assets recorded within the Wider Study Area, and limited assets in the wider landscape. This is as a result of screening provided by

existing woodland, as well as the built environment that forms the eastern fringes of Cumbernauld. Much of this development is industrial in nature, further limiting the potential for changes to the setting of assets. As such, based on the current design, there are no significant operational impacts predicted.

Summary of Significant Effects

7.10.54 No significant effects are predicted for assets within the Cumbernauld substation Extension of the Project of its surrounding Study Area.

Additional Mitigation Measures

7.10.55 While no significant effects have been assessed, archaeological monitoring will be undertaken during site clearance. This could be targeted in areas that appear to have suffered from less disturbance, such as the area of the possible enclosure (AECOM054).

7.10.56 All mitigation works will be agreed with the relevant Local Authority Archaeological Advisor (currently assumed to be SAA), and HES in the case of designated assets, once full details of the construction works have been agreed and prior to works commencing.

Residual Effects

7.10.57 The assessment has concluded that the Project will not result in significant residual effects to cultural heritage.

Monitoring

7.10.58 As noted above in the 'Additional Mitigation Measures' section, while no significant effects have been assessed, archaeological monitoring will be undertaken during site clearance. This could be targeted in areas that appear to have suffered from less disturbance, such as the area of the possible enclosure (AECOM054).

7.10.59 An Archaeological Clerk of Works (ACoW) will be appointed to supervise works during the construction phase.

7.10.60 Archaeological monitoring visits during construction will also be undertaken by the Local Authority Archaeological Advisor (currently SAA).

7.11 Assessment of Effects, Mitigation and Residual Effects of the Wishaw Substation Extension

Introduction

7.11.2 This Section examines the impacts and potential effects on sites of archaeological and cultural heritage interest resulting from the Project at Wishaw Substation (Figure 7.14). Baseline data was collected for the Site as well as a 250m Study Area in order to assess the archaeological potential of the Site, and the potential for physical impacts on heritage assets. A 500 m study area was also assessed for the potential for impacts through changes to setting.

7.11.3 The Scoping report noted that the Project was located within an area that had been previously disturbed as a result of 19th and 20th century industrial and residential development, and that no previously recorded assets had been recorded within the Site. However, the potential for physical impacts on previously unrecorded heritage assets was scoped in due to the limited design information available at the Scoping stage.

7.11.4 A review of the Project, as well as a site visit and a review of 19th century mapping following the submission of the Scoping report, has confirmed that the area of the Project has been extensively disturbed, and as such there is no potential for previously recorded assets to survive. As such, impacts resulting from the Construction Phase on cultural heritage have been scoped out.

7.11.5 Similarly, additional design information relating to the Project has concluded that the Project will not significantly alter the appearance of the existing Wishaw Substation in the Operational Phase. Furthermore, the existing built environment that surrounds the Site provides extensive screening with no views to or from the nearest designated assets which are all at least 1km away from the Project. As such, the potential for significant effects resulting from impacts arising from changes to setting during the Operational Phase on cultural heritage have also been scoped out.

7.12 Assessment of Effects, Mitigation and Residual Effects of the Distribution Line Diversion Works

Introduction

7.12.2 This section examines the impacts and potential effects on sites of archaeological and cultural heritage interest resulting from the Distribution Line Diversion Works. Full details of these works are provided in Section 4 of **Chapter 4: Project Description**. As these works are within the Study Areas for the new Overhead Line (WB Route), as well as the reconductoring works (ZG Route, XX Route, and XR Route), and the decommissioning works (CB Route), baseline information for the areas of the diversions have not been repeated here and are covered in the relevant baselines above.

Embedded Mitigation Measures

7.12.3 Embedded mitigation is limited to careful design to avoid previously recorded heritage assets within the area of work, although the limited number of previously recorded assets within the Site mean that there was limited need to avoid assets.

7.12.4 While works with the scheduled components of the WHS cannot be avoided due to some of the pylons (forming part of the SAP Static Circuit: SP97213) being removed being located within the WHS, SMC has been granted for the removal of these pylons already. These SMC consents are as follow:

- SMC Application 300083236: Dismantling and removal of two lattice towers (Towers BBFK003 and BBFK004) within 'Antonine Wall, Rough Castle to Lime Road, and field system' (SM8244). SMC granted 13/02/2026.
- SMC Application 300064018: Dismantling and removal of the existing SP97222 Cct Woodpoles and the BBFK Woodpole terminal structures within Antonine Wall, Rough Castle to Lime Road, and field system' (SM8244). SMC granted 09/04/2026
- SMC Application 300085458: Dismantling and removal of the existing woodpoles, including all access and reinstatement works within 'Wester Carmuirs, ring ditch settlement 450m SSW of' (SM6413). SMC granted 22/04/2026.

Assessment of Effects

7.12.5 All of these works consist of temporary or permanent undergrounding sections of existing 11 or 33kv Overhead Line's, or the slight altering of the route of the Overhead Line. As such the potential for significant impacts, either negative or beneficial, are limited to physical impacts from construction works. These are detailed below.

Diversion Works Associated with the WB Route

7.12.6 There are 11 diversions proposed as part of the WB Route (see Section 4 of **Chapter 4: Project Description** for full details). In most cases no previously recorded heritage assets have been identified in the areas of the undergrounding works, and, as a result, impacts are limited to potential impacts on previously unrecorded heritage assets.

7.12.7 At the northern end of the WB Route, the diversions consist of removing three sections of existing Overhead Line within the Antonine Wall WHS and the associated WHS buffer, with the permanent diversion located outside of the WHS and WHS buffer. As such, the permanent diversion does not have the potential to result in impacts on the WHS; however, the decommissioning (i.e. removal of poles) does have the potential to result in physical impacts. These impacts are discussed below.

Antonine Wall WHS and WHS buffer

7.12.8 Works within the scheduled monument comprises the removal of two pylons and a wooden pole as part of the SAP Static Circuit: SP97213 works. As has been noted above, SMC has been granted for this work by HES for works to proceed under their supervision.

7.12.9 As the works have been consented in line with an agreed methodology and SMC, significant impacts are not predicted.

Previously Unrecorded Heritage Assets

7.12.10 As noted in the 'Archaeological Potential Section' above for the WB Route, the archaeological potential for all periods is considered to be low or negligible, due to aspects such as the marginal nature of the landscape, the lack of previously recorded heritage assets and previous ground disturbance. The value of any previously recorded assets that might be identified is assumed to be medium for the Roman period, and low for all other periods.

7.12.11 A worst-case scenario has been adopted for the assessment of potential impacts on previously unrecorded heritage assets. As a result, it is assumed that the Project could result in limited changes (i.e. a Low Magnitude of Change) to previously unrecorded assets of medium value, due to the limited nature of the works proposed (i.e. a narrow cable trench). This would result in a Minor Adverse Significance of Effect. However, it should be noted that the potential for identifying previously unrecorded assets is considered to be low, and there is the potential that assets could be avoided, either fully or partially, and therefore significant effects are highly unlikely to occur.

Diversion Works Associated with the ZG Route

7.12.12 A single diversion is proposed as part of the ZG Route works. No previously recorded heritage assets have been recorded within the area of the undergrounding works, and the

area is also assumed to have been previously disturbed as a result of the railway line and power station that previously existed in the area.

7.12.13 As such, there is negligible potential for previously unrecorded heritage assets to survive, and therefore no impacts are predicted. This is discussed below.

Diversion Works Associated with the XX Route

7.12.14 There are 11 diversions proposed as part of the XX Route (see Section 4 of **Chapter 4: Project Description** for full details). In all cases, no previously recorded heritage assets have been identified in the areas of the undergrounding works, and, as a result, impacts are limited to potential impacts on previously unrecorded heritage assets.

Previously Unrecorded Heritage Assets

7.12.15 As noted in the 'Archaeological Potential Section' above for the XR Route, the archaeological potential for all periods is considered to be low or negligible, due to aspects such as the marginal nature of the landscape, the lack of previously recorded heritage assets, and previous ground disturbance. The value of any previously unrecorded assets that might be identified is assumed to be medium for the Roman period, and low for all other periods.

7.12.16 A worst-case scenario has been adopted for the assessment of potential impacts on previously unrecorded assets. As a result, it is assumed that the Project could result in limited changes (i.e. a Low Magnitude of Change) to previously unrecorded assets of medium value, due to the limited nature of the works proposed (i.e. a narrow cable trench). This would result in a Minor Adverse Significance of Effect. However, it should be noted that the potential for identifying previously unrecorded assets is considered to be low, and there is the potential that assets could be avoided, either fully or partially, and therefore significant effects are highly unlikely to occur.

Diversion Works Associated with the XR Route

7.12.17 There are four diversions proposed as part of the XR Route (see Section 4 of **Chapter 4: Project Description** for full details). In all cases, no previously recorded heritage assets have been identified in the areas of the undergrounding works, and, as a result, impacts are limited to potential impacts on previously unrecorded heritage assets

Previously Unrecorded Heritage Assets

7.12.18 As noted in the 'Archaeological Potential Section' above for the XR Route, the archaeological potential for all periods is considered to be low or negligible, due to aspects such as the marginal nature of the landscape, the lack of previously recorded heritage assets, and previous ground disturbance. The value of any previously unrecorded assets that might be identified is assumed to be medium for the Roman period, and low for all other periods.

7.12.19 A worst-case scenario has been adopted for the assessment of potential impacts on previously unrecorded assets. As a result, it is assumed that the Project could result in limited changes (i.e. a Low Magnitude of Change) to previously unrecorded heritage assets of medium value, due to the limited nature of the works proposed (i.e. a narrow cable trench). This would result in a Minor Adverse Significance of Effect. However, it should be

noted that the potential for identifying previously unrecorded assets is considered to be low, and there is the potential that assets could be avoided, either fully or partially, and therefore significant effects are highly unlikely to occur.

Monitoring

7.12.20 The requirement for archaeological monitoring would be agreed with Stakeholders as part of the mitigation strategy. This will be undertaken by an Archaeological Clerk of Works, and include work within the immediate environs of the WHS, as well as areas of previously recorded assets.

7.13 Project-wide Effects

Introduction

7.13.1 This chapter of the EIA Report presents details of the 'project-wide' effects for Cultural Heritage. Project-wide (combined) effects are defined here as those effects that are considered separately in relation to various elements of the Project which are reported in the previous sections of this EIA Report chapter, but which have the potential to be of greater significance when considered in combination.

Shared Receptors

7.13.2 Table 7-24 presents a screening of the receptors identified as having the potential for project-wide effects for Cultural Heritage.

Table 7-24 Screening of Project-wide receptors for Cultural Heritage

Receptor	Relevant Elements of the Project
Antonine Wall World Heritage Site	WB Route; CB Route; and Diversions Works

Assessment of Potential Project-wide Effects

7.13.3 The assessment of Project-Wide Effects examined the potential for different components of the Project to impact on the same receptor, both through physical changes as well as change to the setting. The nature of the Project means that in the majority of cases the receptors assessed for the separate components will not be subject to Project-Wide Effects due to aspects such as the distance between the components.

7.13.4 The only assets where there was the potential for significant Project-Wide Effects was the Antonine Wall WHS. This is largely due to the large nature of the asset, as well as the number of component part of the Project centred on the Antonine Wall area. This is discussed below.

Antonine Wall World Heritage Site

7.13.5 The potential for effects resulting from physical impacts during the Construction Phase as well as changes to the setting of the Antonine Wall during the Operational Phase were assessed for the WB Route, CB Route, and associated diversion works (mainly the AA

Route). This concluded that there would be no significant effects result from physical impacts on the WHS or associated assets as the works hard been largely designed to avoid the scheduled components of the WHS/associated with the WHS.

7.13.6 The assessment of effects resulting through changes to the setting of the WHS, and the potential for the introduction of a new Overhead Line (the WB Route) identified that the likely effects on the attribute that convey the OUV of the WHS would be **Minor Adverse**.

7.13.7 The assessment of effects resulting from the removal of the CB Route across the Antonine Wall concluded that there would be a **Moderate Beneficial** effect. This is due to the removal of a pylon from within a scheduled component of the WHS, as well as the associated Overhead Lines.

7.13.8 Based on the assessment of the various components in combination, the overall Significance of Effect for Project-Wide Effects is considered to be no greater than that assessed for the separate components. While the removal of CB Route would result in a Beneficial Effect, this will not cancel out the Minor Adverse identified for the WB Route works.

7.13.9 A such, the Project-Wide Effect on the Antonine Wall WHS is considered to be **Minor Adverse**.

Summary of Potential Project-wide Effects

Table 7-25 Summary of Potential Project-wide effects for

Receptor	Summary of Potential Project-wide Effects of the Project for Cultural Heritage
Antonine Wall World Heritage Site	Minor Adverse

7.14 Summary and Conclusions

7.14.1 This chapter provides an assessment of the likely significant effects on heritage assets (archaeological remains, historic buildings and historic landscapes) that are anticipated to arise from the Construction and Operational Phases of the various components that for the Project. These are defined as:

- The WB Route
- The CB Route
- The AA Route
- The XR Route
- The XX Route
- The ZD Route
- Denny North Substation Works
- Bonnybridge Substation Extension
- Cumbernauld Substation Extension

- Wishaw Substation Extension

7.14.2 The assessment of existing baseline conditions for the various components of the Project identified limited evidence for previously recorded assets within the Sites, with the exception being the corridor of the Antonine Wall WHS. This linear nature of this asset means that both the CB Route and the WB Route crossing the monument on a north-south alignment, with works associated with the CB Route removing a pylon from the WHS as well as the Overhead Line that currently oversails the WHS (SAP Static Circuit: SP97213). The WB Route will result in a new Overhead Line oversailing the WHS, however, it will not result in any new infrastructure within the WHS.

7.14.3 The assessment also noted that the archaeological potential for the various Components was also considered to be low. This is largely a result of aspects such as previous ground disturbance from industrial process and commercial woodland, as well as the marginal nature of some areas (i.e. area or wet and boggy land).

7.14.4 The assessment of impacts for the various components of the Project did not identify any residual significant effects in either the Construction or Operational Phases.

7.14.5 An HIA conducted in line with UNESCO Guidance concluded that the introduction of a new Overhead Line (i.e. the WB Route) would result in a '**Minor Negative Impact**' on the WHS, while the decommissioning of the CB Route and the SPD works would result in a '**Moderate Positive Impact'**.