2 ENVIRONMENTAL BASELINE & CONSTRAINTS

2.1 Introduction

Baseline information on environmental topics that are typically considered as part of overhead line diversion schemes and infrastructure projects are outlined below. These include:

- Landscape and visual
- Ecology
- Cultural heritage and archaeology
- Hydrology and hydrogeology
- Land use and agriculture
- Air quality and noise
- Geology and soils.

A review of the relevant planning policy has also been carried out to inform the environmental assessment and ensure that the proposed works are commensurate with Renfrewshire Council's strategic land-use objectives for the area.

Section 3 of this Report identifies potential impacts that may arise as a result of the proposed re-routing and recommends relevant mitigation where appropriate.

2.2 Landscape & Visual

A study area of 2km has been identified for the landscape and visual assessment, following an initial site visit and review of the proposed development. This section provides a description of the baseline landscape and visual resource of the Study Area, focusing on potential key receptor locations.

2.2.1 Landscape Designations

No landscape designations have been identified within the Study Area. Clyde Muirshiel Regional Park and Gleniffer Braes Country Park are found within the wider area, located approximately 5km to the southwest, and 2.5km to the southeast respectively.

2.2.2 Landscape Character

A detailed review and classification of the landscape character of Scotland has been undertaken by Scottish Natural Heritage (SNH) in partnership with local authorities, with a series of publications produced to describe each area. The proposed development is found within the area covered by the Glasgow and the Clyde Valley Landscape Assessment[1]. This Report provides a detailed description of the landscape character of the Glasgow and Clyde Valley area at progressively smaller scales, identifying 10 Regional Character Areas, subdivided into 21 Landscape Character Types (LCTs).

The Study Area for the proposed development is largely of urban character, but also includes an area of Alluvial Plain LCT and two areas of Rugged Upland Farmland LCT. Following a site visit and landscape appraisal the boundaries of the LCTs have been redefined slightly to better reflect the existing local conditions and are shown on Figure 2.2.1 in Appendix 1, 'Landscape and Visual Receptors'.

[1] Scottish Natural Heritage Review No. 116 – Land Use Consultants, 1999

The following provides a brief description of the key characteristics of each of the identified relevant LCTs based on a review of the Glasgow and the Clyde Valley Landscape Assessment and on site appraisal.

Urban
The majority of the study area has been identified as urban and industrial character. The proposed development is located within an area of predominantly industrial character and includes large car parking and storage areas, wasteland, large warehouses and the existing overhead line and associated towers. The wider urban area is characterised by a combination of industrial, commercial and residential development.

Alluvial Plain
The Alluvial Plain LCT is found within the north of the study area and is generally characterised by low, flat topography which can be susceptible to flooding. Agriculture is the predominant land use and fields are generally defined and divided by post and wire fences, broken hedgerows and trees. Settlement is relatively sparse although adjacent urban areas and elements locally influence the impression of this LCT.

Rugged Upland Farmland
Within the study area this LCT is found in three areas; to the south and east of Elderslie and Johnstone, and to the west of Linwood. These areas are characterised by rolling farmland, often divided by trees and remnant hedgerows. The adjacent urban development, traffic on the A737 and existing overhead lines can locally influence the impression of this landscape.

2.2.3 *Visual*

As highlighted in the landscape baseline section above, this area is well developed and settled. There is generally a strong industrial and urban context to views within the study area. The developed nature and prevalence of trees along the settlement edge and road corridors can restrict views from many locations. However, more distant views to the surrounding rolling landscape are also possible from many locations. The following provides an overview of the main groups of visual receptors potentially affected by the proposed line diversion.

Residential
The study area includes a large number of residential properties, mainly located within the conjoined settlements of Elderslie, Johnstone and Linwood.

Views north and west from residential properties in Elderslie and Hillman Crescent are often limited by adjacent buildings and trees. However, there are some more open, slightly elevated views over the adjacent industrial area to Linwood and the landscape beyond.

Views east from Johnstone tend to be restricted and limited by adjacent buildings and trees, with some partial views of industrial buildings and the tops of overhead line towers. More widespread, panoramic views over the surrounding area are possible from the upper storeys of the Provost Close high rise building.

Views south from Linwood tend to be restricted by adjacent buildings and woodland planting along the north side of the A737. Views from the upper storeys of Asbury and Belmar Court high rise flats would gain more widespread panoramic views over the adjacent industrial and urban area and the hills and landscape beyond.

Transport and Recreational Routes
A number of transport and recreational routes cross the study area. These include: the A737, A761 and B789 roads; the Paisley to Ardrossan Railway; National Cycle Routes 7 and 75; and several Core Paths. Existing views from these routes are variable, with sections of relatively open views over the surrounding landscape and more enclosed views, restricted by woodland, buildings and landform.

2.3 Ecology

An extended Phase 1 habitat survey was undertaken within the Survey Area outlined in Figure 2.3.1 (Appendix 1) on the 4th April 2014. The survey objectives were to:

- Map the existing habitats within the Survey Area;
- Record the presence of, or potential for protected species within the Survey Area;
- Identify ecological constraints on the proposed development; and,
- Inform an assessment regarding any potential ecological constraints.

Based on the findings of the Phase 1 habitat survey, a bat emergence survey was also undertaken on 9th July 2014 to investigate the presence of roosting bats in a tree located in the area of woodland in the vicinity of proposed tower AU6R. The following section outlines the extent and nature of the survey which was undertaken.

2.3.1 Desktop Survey

Baseline information has been collated through desktop research from a number of sources. Details on statutory site designations were obtained via the SNH SiteLink and Natural Spaces webpages[2]. Information on local designations was obtained from the Renfrewshire Local Plan (March 2006).

2.3.2 Designated Sites

The site area is not located within or adjacent to a nationally or internationally designated site for nature conservation. Downstream of the site sections, the Black Cart Water and the River Clyde, to which the Black Cart is a tributary, host international designations primarily for waterfowl and waders. These should therefore be taken into consideration and are described further below. Two Sites of Importance for Nature Conservation (SINCs) are located within the site area and the Durrockstock Park Local Nature Reserve (LNR) is located 2km to the south-east. These are described further below.

Black Cart Special Protection Area (SPA) & Site of Special Scientific Interest (SSSI)
The Black Cart SPA is located approximately 3.5km downstream of the development corridor. The qualifying feature of the SPA is an internationally important wintering population of Icelandic whooper swan Cygnus cygnus. The Black Cart SPA is underpinned by its designation as a SSSI. As with the SPA, the SSSI designation relates to the site's importance as an overwintering habitat for Icelandic whooper swans.

Inner Clyde SPA, Ramsar Site & SSSI
Downstream of Linwood Industrial Estate, the Black Cart Water and White Cart Water converge before flowing into the River Clyde approximately 8km downstream. The section of the River Clyde downstream of the Cart Water confluence is designated as part of the Inner Clyde SPA and Ramsar site. The qualifying feature of the SPA and Ramsar site is an internationally important wintering population of redshank Tringa tetanus, supported by the extensive intertidal mudflats and saltmarsh of the River Clyde estuary. These European designations are underpinned by the site's designation as a SSSI. Qualifying features include seven species of wintering waterfowl (most notably red-throated diver Gavia stellata) and saltmarsh.

Local designations

[2] (http://www.snh.gov.uk/publications-data-and-research/snhi-information-service/)

In addition to the national and international designated sites highlighted above, there are a number of local designated sites within 2km of the site:

- Two Sites of Interest for Nature Conservation (SINCs);
- Durrockstock Park LNR (2km south-east of the development site).

The two SINCs located within Linwood Industrial Estate (Island and Weir Black Cart and Linwood Industrial Estate) are the only local designations which are likely to be affected by the proposed works. Island and Weir Black Cart consists of the Black Cart Water and surrounding riparian habitat and is one of a series of SINCs on the Black Cart protecting this corridor of habitat. The second, Linwood Industrial Estate, encompasses Old Patrick Water a small tributary of the Black Cart and the surrounding habitats. SINCs are non-statutory wildlife sites that are noted for their local importance for nature conservation. The SINCs present on site are important local wildlife corridors for a number of species including mammals (otter Lutra lutra and bats) and bird species.

Durrockstock Park is an area of plantation woodland and open water, it is 2km to the south-east and is disconnected from the works site and will therefore not be considered further.

2.3.3 *Extended Phase 1 habitat survey*

Phase 1 habitat survey provides a rapid assessment of habitat presence and quality, in which blocks of land are assigned to standard habitat categories. The standard Phase 1 habitat survey methodology[3] was used for the purposes of this Report: the extended aspect comprising of the noting of protected species evidence, mapping of non-native invasive plant species and consideration of any other relevant ecological information. Phase 1 field mapping was undertaken using high resolution aerial photography combined with Ordnance Survey mapping to maximise accuracy. Results were digitised using ArcGIS.

The types of protected species evidence searched for included refuges, droppings and latrines, footprints and trails, foraging signs, and other evidence such as guard hairs.

Survey Area
The Survey Area was defined as the footprint of the OHL route plus a 100m buffer round each tower to be constructed including 200m up and downstream of towers AU5R and AU4A due to their close proximity to the Old Patrick Burn watercourse. The areas surrounding the base of the existing towers were also surveyed.

Survey Timing and Constraints
The survey was undertaken on 4th April 2014 which is an optimal time of year for the protected species likely to occur (otter and badger), but slightly sub-optimal for Phase 1 habitat survey due to the dieback of vegetation over the winter period.

The river levels were extremely high during the time of survey in both the Old Patrick Burn and the Black Cart which may have had an affect on the presence of otter signs within the Survey Area as a result of reduced otter movements, washing away of signs and obstructing potential refuges from view.

Access restrictions occurred resulting in some areas remaining un-surveyed, namely the QPark compound in the south east of the site, the south section of the Old Patrick Burn and the south bank of the Black Cart Water. These restrictions were primarily a result of impenetrable fencing which surrounded the QPark area and the Old Patrick Burn; these areas were surveyed from the boundary fences which was satisfactory for a Phase 1 Habitat Survey

[3] Joint Nature Conservation Committee (2010). Handbook for Phase 1 Habitat Survey. JNCC, Peterborough.

however a close search of the burn for signs of protected species was not possible. This was further hindered by the very high water levels in the burn. The Black Cart Water was also in full spate and this coupled with the extremely dense nature of the vegetation made a detailed survey of the south bank for signs of protected species unfeasible.

2.3.4 *Phase 1 Survey Results*

A number of broad habitat types were recorded within the survey area, predominantly man made areas consisting of industrial buildings and associated hardstanding. The semi-natural habitats were largely confined to areas comprising the Sites of Importance for Nature Conservation (SINC) in the north of the site and along the watercourses.

The distribution of habitats recorded is shown on the Extended Phase 1 Habitat Survey Map in Appendix 1 Figure 2.3.1. A short description of each is provided below.

Hardstanding
Hardstanding comprising the industrial compounds and car parks was the most frequent 'habitat'. These areas have been mapped however roads and pavements have been left blank for clarity. Existing tower AU005 is located on hardstanding.

Woodland
At the western end of the site, on the north bank of the Black Cart Water is a small area of semi-mature broadleaf plantation which is encompassed by the Island and Weir Black Cart SINC. Species present included sessile oak Quercus petraea, ash Fraxinus excelsior and silver birch Betula pendula with scattered non-native conifer species. The understory included holly Ilex sp, broom Cytisus scoparius, bramble Rubus fruticosus and non-native shrubs. Additionally, the non-native tall herb Himalayan Balsam *Impatiens glandulifera* was present as part of this understory. This species is invasive, therefore included in Schedule 9 of the Wildlife and Country side Act 1981 (as amended in Scotland), and is discussed further below.

North of Burnbrae Road within the Linwood Industrial Estate SINC is a second area of semi-mature broadleaf plantation dominated by willow Salix sp, silver birch, and hawthorn Crataegus monogyna with dense brambles and a sparse understory which included scattered plants of Himalayan balsam (see Invasive Species section below). This woodland included one older Lime *Tilia sp* tree of ecological interest, particularly as a potential bat roost (see section 2.3.5 below). A strip of younger planted woodland dominated by birch borders this older woodland to the north. AU6R is positioned in the older section of this woodland.

Sparse plantation woodland occurs in a very narrow strip on the banks of the southern section of the Old Patrick Water. Species present include young ash and willow with frequent scrubby species such as bramble and gorse Ulex europaeus and dominant ground flora of comfrey Symphytum sp, nettle Urtica dioica and ground elder Aegopodium podagraria, in some areas the trees thin and the habitat becomes solely scrub. Frequent Japanese knotweed Fallopia japonica occurs along this section of the watercourse, particularly on the east bank. To the very south of the survey area this riparian woodland becomes more natural (particularly on the west bank) and beyond the area of the industrial estate becomes semi-natural, mature broadleaf woodland.

Scrub
Scattered scrub occurs frequently across the survey area with frequent species comprising broom, gorse and bramble. On the north bank of the Old Patrick Water, north of Burnbrae Road, the scrub is particularly dense and includes a large stand of raspberry Rubus idaeus. Japanese knotweed Fallopia japonica is also present here. Dense scrub also occurs along the edges of the woodland south of the burn, extending into the marshy grassland to the west.

A large and very dense area of scrub occurs south of the Black Cart Water with broom, bramble, extensive Japanese knotweed, willow and some trees including ash and birch.

At the base of tower AU004 there is some scattered scrub including dogwood Cornus sp. dense scrub habitat with willow and bramble occurs at the base of the existing tower AU006.

Grassland
The most common grassland habitat is marshy grassland which occurred in several patches including one north of Burnbrae Road on the banks of the Old Patrick Water and the wider area, one within the Scottish Water compound in the west of the survey area and a small patch at the base of tower AU009. The dominant species was ubiquitously soft rush Juncus effusus with other frequent species including the moss Calliergonella cuspidata, tufted hair grass Deschampsia caespitosa, reed canary grass Phalaris arundinacea and occasional meadow sweet Fillipendula ulmaria.

North east of the Old Patrick Water the marshy grassland graded into semi-improved grassland on the higher ground with common bent Agrostis capillaris, Yorkshire fog Holcus lanatus and the moss Brachythecium rutabulum abundant. Small patches of semi improved grassland also occurred on the north bank of the Black Cart, the verge of the A737 road by AU009 and in the Scottish Water compound.

Amenity grassland was also recorded forming verges along the roadsides and surrounding the base of existing tower AU004 (along with scattered scrub) and AU007.

Tall herb/ruderal
This habitat is represented by several small patches, mainly in the north west of the site, with the dominant species being rosebay willowherb Chamerion angustifolium. This species is also scattered amongst the scrub to the west of the young birch plantation and along the banks of the Old Patrick Water.

In the grounds of the Rinus compound by the south fence, numerous plants of giant hogweed Heracleum mantegazzianum occur amongst other ruderal vegetation such as Buddleja. Existing tower AU008 occurs within this habitat.

Ephemeral/short perennial
Ephemeral habitat occurs scattered across the site in disturbed areas such as along the edges of car parks. Only significant patches have been mapped including an area in the Scottish Water compound, on disturbed ground in the SINC north of Burnbrae Road and on the QPark area to the east of the development site. Dominant species are similar across the site and include the moss Didymodon insulanis, colt's-foot Tussilago farfara and clover Trifolium sp.

Spoil
Three areas in the west of the site have been mapped as spoil, these include a large tyre pile, mounds of compost-like matter and other apparently waste material.

Boundaries
Due to the industrial nature of the site and numerous landowners, boundary fences are frequent. These largely consist of metal mesh or metal palisade and would pose significant boundaries to animal movement in parts of the site.

Non-native invasive species
Japanese knotweed occurred extensively over the site, particularly, but not restricted to, the banks of the two watercourses. Both large volumes of dead material from last season and several of this year's young shoots were recorded. On a subsequent visit to the site (9th July 2014) the full extent of summer growth was observed, with tall, dense stands of this species dominating large areas, particularly the south bank of the Black Cart Water. Giant hogweed was recorded in one area by the south fence of the Rinus compound, again last year's dead growth was recorded along with new plants emerging, and the full growth observed in July. Although giant hogweed was only recorded in one area, the stand comprised many plants and

extended for several metres. Himalayan balsam was recorded during a subsequent visit to undertake a bat survey in July. This occurred in the plantation woodland on the north bank of the Black Cart Water and was scattered in the woodland north of Burnbrae Road.

The occurrence of non-native invasive species is included where relevant in the habitat descriptions above and their distribution recorded on the Extended Phase 1 Habitat Map in Figure 2.3.1 in Appendix 1.

Due to the early stage of the growing season during the Phase 1 survey, it is possible that some stands of invasive species were not recorded. Only incidental observations were made during the July bat survey visit.

Protected Species
No signs of protected species were recorded during the survey described in this Report. The habitat surveyed was considered suitable for otter and it is known that there is a healthy population of this species on the Black Cart Water which runs through the site. It is highly possible that the high water levels at the time of survey removed/obscured field signs from the watercourses.

One tree was recorded as having a moderate potential to support roosting bats. This was a large lime in the area of plantation north of Burnbrae Road. This tree was much older than the others in the wood and had several large cracks where branches have fallen and loose patches of bark which crevice-dwelling species such as pipistrelle Pipistrellus sp favour as roosts. No other structures/trees on site were assessed as having bat roost potential. A visit in July was undertaken to further investigate the bat roost potential of this tree, this survey is described in section 2.3.5 below.

During the survey several snipe Gallinago gallinago were flushed from the area of semi-improved/marshy grassland north of Burnbrae Road on the east bank of the burn. It is possible that this species breeds here as the habitat is suitable. Several loafing lesser black-backed Larus fuscus and herring gulls L. argentatus were recorded on the large disused car park in the east of the site, it is possible that this species may breed here along with other species such as ringed plover Charadrius hiaticula or oystercatcher Haematopus ostralegus. There are suitable habitats for these species on other parts of the site, although methods are employed to control occurrence of birds in some compounds (pers comm.).

Additionally there are many areas of scrub/woodland and other dense vegetation on the site which are highly suitable for breeding birds.

2.3.5 Bat Emergence Survey

Based on findings from the Phase 1 Habitat Survey, a bat emergence survey was recommended regarding a mature lime tree in the plantation woodland to the north of Burnbrae Road. The aim of this survey was to investigate the use of features of this tree by bats as a roost, to record the species of bats present (if any) and suggest, if appropriate, any further survey requirements and mitigation measures.

Survey Area and Method
The survey area centred on the tree identified with bat roost potential with one surveyor on the ground on each side of the tree. Once the time considered suitable for bat emergence passed (and visibility faded, see 'survey timing and constraints' section below), surveyors moved to the woodland edge and recorded bat activity in the general area, from the plantation woodland along Burnbrae Road to the area of marshy grassland to the west. Surveyors used ultrasonic bat detectors to aid surveying and identify species, the models used were a BatBox Duet and a Pettersson D240.

Survey Timing and Constraints

The survey commenced at 21:45 and ended at 23:30, with dusk at 22:00. There were no constraints regarding weather, this was fine and warm, with some cloud cover (approximately 20%), light wind, and a start temperature of 16 C. Visibility was initially good with most cracks/large crevices visible, although this deteriorated rapidly after dusk as the tree canopy was very dense. At 22:45 it was decided bats would no longer be seen if they did emerge and to move to survey the wider area. This is not considered a significant constraint as generally, the species recorded using the area emerge within approximately 20-30 minutes of sunset.

2.3.6 *Bat Emergence Survey Results*

No bats were seen emerging from the lime tree being surveyed. At 22:27 the first soprano pipistrelle *Pipistrellus pygmaeus* was recorded flying amongst the woodland near the tree. This is only 27 minutes after sunset (this species generally emerges 20-30 minutes after) suggesting a roost is in the near vicinity. Several more individual soprano pipistrelle passes were recorded in the area of the tree, the last of these at 22:31.

Following this both soprano and common pipistrelles *P. pipistrellus* were recorded foraging in the general area. The detailed flight paths can be seen in Figure 2.3.2 (Appendix 1). In general, bat activity was centered along the south edge of the plantation and over the area of marshy grassland/swamp north of Burnbrae road. Some activity was recorded over the industrial compounds themselves, most likely centered around areas of artificial lighting.

2.4 Cultural Heritage & Archaeology

There are no scheduled monuments or conservation areas within the study area. A desktop search of the Scottish Government's environment website[4] and The Royal Commission on the Ancient and Historical Monuments of Scotland (RCHAMS) Pastmap website[5] shows the following assets within 500m of the proposed development:

- 3 listed buildings within 500m including Elderslie Kirk West (Ref: 19893), Elderslie East Church (Ref: 43480) Category C listed buildings and the Wallace Monument (Ref: 18586) Category B listed building.
- The following archaeological features:
    - The Glasgow, Paisley and Johnstone Canal, Railway Bridges (Braskiven and Elderslie) and Old Patrick Aqueduct;
    - Elderslie, Signal Box
    - Johnstone, Elderslie, Stone Axe
    - Johnstone, 'Wallace's Oak', Tree
    - Johnstone, Dam
- Archaeological Survey: Linwood Lade, Linwood, Renfrewshire (http://www.wosas.net/wosas_event.php?id=4199)
- Archaeological Evaluation: Burnbrae Road, Linwood, Renfrewshire (http://www.wosas.net/wosas_event.php?id=4252)

[4] (www.environment.scotland.gov.uk)

[5] (http://pastmap.org.uk/)

The above information is demonstrated in Figure 1.2 (Appendix 1) which maps environmental constraints within the Study Area.

2.5 Hydrology/Hydrogeology

The principal watercourses in the vicinity of the existing and proposed OHL routes are the Old Patrick Water and the Black Cart Water. The Old Patrick Water has a Water Framework Directive (WFD) status of 'Moderate' which comprises a chemical status of 'Pass' and an ecological status of 'Moderate'.

The Black Cart Water is classified under the Freshwater Fish Directive and is therefore protected for salmonoid species. This waterbody has a WFD status of 'Bad Ecological Potential', with an ecological status of 'Bad' and a chemical status of 'Pass'. This poor status is related to the fact that it is a Heavily Modified Waterbody and is an Urban Waste Water Treatment Directive Sensitive Area. A number of pressures exist on the River including sewage disposal, diffuse pollution from livestock farming, morphological alterations, abstractions and flow regulation. It is planned to improve the status of the River over the River Basin Management Planning (RBMP) cycle, with the aim of reaching 'Good' Status in the 2027 cycle.

SEPA flood risk management maps indicate that there is extensive out of bank flooding from both watercourses in high probability events in the vicinity of the proposed works.

The Paisley and Rutherglen bedrock and localised sand and gravel aquifers underlie the site and have an overall WFD status of 'Poor'. This is due to a chemical status of 'Poor' caused by diffuse source pollution related to mining activity and chemical production. There are no plans to improve the status of the groundwater body within the foreseeable future and it will therefore remain 'Poor', although it is hoped to reduce the diffuse source pollution related to chemical production. Water levels are likely to be shallow in places (<2m depth below ground).

As the current status of these waterbodies is 'Moderate' to 'Poor', they are assessed to have only moderate sensitivity to changes.

2.6 Land Use & Agriculture

The existing and proposed route corridors run entirely within Linwood Industrial Estate which is identified for strategic industrial and business use within the adopted Local Plan. There are no agricultural works located within, or in the immediate vicinity of the proposed works. Impact on agricultural assets has therefore been scoped out of further consideration.

A list of landowners/current operations are detailed below along with specifically proposed works within each parcel of land:

- QPark - Currently used as long term car parking facility; re-wiring works required between AU004 and AU4A. Construction compound for AU4A will likely extend into this area.
- William Tracey Group – Recycling and resource management operations; location of AU5R, AU6R and AU7R, with associated re-wiring works.
- The Malcolm Group – Storage and general industry; location of AU4A. Re-wiring works between AU4A and AU5R.
- Rinus - Storage and distribution; Re-wiring works between AU7R and AU8R.
- Scottish Water – Former Johnstone Sewage Treatment Works now largely grassed open space; Location of AU8R and re-wiring works between AU7R and AU009.

Consented development
There are a number of existing consents in place for proposed development at the site. The most significant of these, in the context of the proposed overhead line re-routing, were

identified by Renfrewshire Council in their response to our pre-application consultation. These can be summarised as follows:

- 08/0658/PP - Creation of anaerobic digestion facility to treat local authority waste streams and food waste from commercial & industrial facilities - Former Water Treatment Works, Burnbrae Road, Linwood, Paisley. Approved 26/02/2009.
    - 12/0391/PP | Formation of temporary concrete composting pad with associated access road | Former Water Treatment Works, Burnbrae Road, Linwood, Paisley. Approved 09/10/2012
    - 12/0579/PP | Erection of 2.7m high security fencing | Former Water Treatment Works, Burnbrae Road, Linwood, Paisley. Approved 30/07/2012.
- 07/0292/PP - Formation of long stay car park and associated land engineering works, formation of vehicular access and erection of gatehouse / reception building. - Land at Lyon Road, Burnbrae Road, Linwood, Paisley. Approved 23/12/2008.
- 07/0291/PP - Formation of long stay car park and erection of hotel / office development and associated land engineering works. Formation of vehicular access and erection of gatehouse / reception building. - Burnbrae Road, Linwood. Approved 23/12/2008.

Landownership within the route corridor is shown in more detail in Figure 2.6.1 in Appendix 1.

2.7 Air Quality & Noise

The Renfrewshire Council Local Air Quality Progress Report (2011) shows that there are no Air Quality Management Areas (AQMAs) within the study area. There are two diffuse monitoring stations measuring NO^2 concentrations on Kintyre Avenue, approximately 300 metres north-west of the development site; Linwood 30 and Lindwood 51. Lindwood 30 is an 'Urban Background' site and Lindwood 51 is a 'Roadside' site. Both of the monitoring stations show no exceedance and results well below the Air Quality objective levels for NO^2 (40µg.m-3).

There are no PM10 monitoring stations in the Study Area. However, Defra's Background Maps[6] show background PM10 levels as being approximately 12µg.m-3 within the Study Area which is below the air quality objective level of 18µg.m-3.

Sensitive receptors within 250m of the development corridor include:

- National Cycle Route 7 and 75,
- Local cycle routes,
- Residential properties located south-west of the study area and north of the A737,and;
- 5 Core paths (LIN/11, LIN/12, LIN/13, JOHN/5, JOHN/6).

2.8 Geology and Soils

Information regarding the geological conditions at the site was obtained from the British Geological Survey (BGS) Geology of Britain Viewer[7] and available historical BGS borehole logs for the area[8].

[6] http://laqm.defra.gov.uk/maps/maps2010.html#scotmaps

[7] http://mapapps.bgs.ac.uk/geologyofbritain/home.html

[8] http://mapapps2.bgs.ac.uk/geoindex/home.html (Borehole Reference NS46SW210 and NS46SW174)

The natural superficial deposits beneath the site are generally recorded to comprise raised tidal flat deposits of Late Devensian age. These deposits are reported to comprise gravel, sand and silt. An area of Alluvium is noted to be present at the northern extent of the current and proposed lines, at tower AU009. These deposits are considered to be associated with the Black Cart Water and are reported to comprise clay, silt, sand and gravel.

The majority of the existing and proposed tower locations are situated within areas of hardstanding (tarmac/concrete/hardcore), although the proposed towers AU06R and AU7R are situated within an area of marshy grassland and woodland. Given the current use of the site as an industrial estate, which includes an active waste transfer station, a former sewage works and other industrial units, it is considered likely that made ground deposits associated with development of the site will be present. The presence of elevated concentrations of contaminants within the made ground deposits cannot be discounted.

The underlying bedrock is recorded to generally comprise limestone of the Limestone Coal Formation. A band of limestone from the Hosie Limestone Formation is reported to be located in the area around proposed tower AU4A, while limestone from the Lower Limestone Formation is reported to be present beneath the area of existing tower AU004, at the southern extent of the current and proposed lines.

Logs for two historical boreholes advanced within the vicinity of the site in 1968 and 1975, recorded 'soil' to depths of approximately 0.3 m bgl. This was recorded to be underlain by 'clay' or 'boulder clay with stones' to depths of between 6.5m – 7.0m bgl. These superficial deposits were reported to be underlain by bedrock, comprising sequences of sandstone, mudstone and siltstone to depths of up to 30m bgl.

A review of the Coal Authority's Interactive Map Viewer[9] indicates that the site is located within the Coal Mining Reporting Area. No mine entries are indicated to be present in proximity to the existing or proposed tower locations, although a mine shaft is reported to be located approximately 50m east of tower AU009 along Lyon Road. In addition, a second mine shaft is shown to be located approximately 100m west of proposed tower AU08R.

2.9 Planning Policy

The study area is located entirely within Renfrewshire Council's administrative boundary and while the Council is not the decision making authority for the S37 application, the adopted Development Plan and any emerging plans are a material consideration for the proposed works.

Glasgow and Clyde Valley Strategic Development Plan (May 2012)
The Glasgow and Clyde Valley Strategic Development Plan (SDP) sets out the spatial vision for the city region to 2035 along with a spatial development strategy to deliver that vision. It is considered that the proposed works are in accordance with the specific spatial strategies identified in the Plan and given that the use of land will not be altered by the proposed re-alignment, no detailed assessment of strategic/regional effects has been carried out.

The Renfrewshire Local Plan (March 2006)
The Renfrewshire Local Plan is the document that currently guides development and the use of land within the area. In assessing development proposals the Council will therefore, in the first instance, consider whether the proposal accords with the Development Plan.

The diversion route is located entirely within an area safeguarded for 'Strategic Industrial and Business Uses'. Policy IB2 refers, in that the Council safeguards the area for "*Class 4*

[9] The Coal Authority, 2012. Interactive Map Viewer. Available: http://coal.decc.gov.uk/en/coal/cms/publications/data/map/map..

Business, Class 5 General Industry and Class 6 Storage and Distribution development and ancillary service provision". Replacement tower AU7R lies within an area designated as a Site of Importance for Nature Conservation (SINC) and Policy ENV 3 therefore applies. Existing tower AU9 lies adjacent to a separate SINC and within a designated area of Informal Open Space. Policies ENV 3 and L3 are also therefore relevant.

A Core Path (LIN\13) runs east-west across the site following Burnbrae Road before adjoining (LIN\12) just south of the A737 and in close proximity to existing tower AU009.

No other specifically designated areas are located within the proposed route corridor and as such the policy principles which will require consideration can be summarised as follows:

- Policy IB2: Strategic Industrial and Business Locations – General;
- Policy ENV 3: Local Designations: Sites of Importance for Nature Conservation (SINCs);
- Policy L3: Protection of Formal and Informal Open Space
- Policy F1: Flood Risk;
- Policy F3: Fulfilment of Flood Prevention and Sustainable Urban Drainage Requirements;
- Policy C1: Consideration of Development Proposals involving land which may be contaminated; and,
- Policy N1: Noise Protection.

Renfrewshire Council Proposed Local Development Plan (as amended June 2014)
As discussed in section 1.5 above, the Proposed LDP was published with modifications in June 2014. The designations relating to the development corridor have largely been carried forward from the existing Local Plan, with the entire site being located in an area of 'Strategic Economic Investment'. Policy E1 will update and replace the current designation policy (IB2 of the adopted Local Plan), however the overall principles for development largely remain consistent.