

Network Rail

**170248 Headbolt Lane New
Station GRIP 4**

**ES Volume IV: Non-Technical
Summary**

170248-ARU-REP-EEN-000018

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This report takes into account the particular instructions and requirements of our client.

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Ove Arup & Partners Ltd
6th Floor, 3 Piccadilly Place,
Manchester M1 3BN
United Kingdom
www.arup.com

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			Prepared by	Checked by	Approved by
		Name	Sophie Long	Ed Crowley	Andrew Carr
		Signature			
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			Prepared by	Checked by	Approved by
		Name	Shane McGartland	Emma Bonser	Andrew Carr
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1 Introduction

This document provides a Non-Technical Summary of the Environmental Statement that has been prepared for the proposed Scheme of Headbolt Lane (referred to as the ‘proposed Scheme’). This provides a high-level summary of the assessments that have been carried out and how Headbolt Lane station, car park and associated railway line works could affect the environment. Full technical details are provided within the full Environmental Statement (Volume I: Main Report, Volume II: Figures and Volume III: Technical Appendices).

The Environmental Statement has been prepared to comply with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 and is submitted with the application for Full Planning Permission to Knowsley Metropolitan Borough Council (KMBC). Environmental Impact Assessment is a formal process to predict the adverse and beneficial effects of a proposed Scheme. The Environmental Statement sets out the range of likely significant environmental effects of the proposed Scheme.

Hard copies of the ES and NTS are available for public viewing in KMBC, Municipal Buildings, Huyton, L36 9UX. CD copies will be available from Arup at a cost of £10.00 per copy + VAT. Electronic copies of the ES can also be downloaded from the KMBC planning website.

Network Rail are applying for Full Planning Permission for Headbolt Lane station, car park and associated railway line works.

2 The Site and the Proposed Scheme

2.1 The Site

The proposed station and car park site are situated in an area of green space adjacent to Headbolt Lane, see Figure 1 (Grid Ref: SJ 41308 99815). The area of the proposed station and car park is approximately 5.9 ha. The area of proposed railway corridor upgrade is located on the existing Liverpool-Wigan rail corridor. The railway corridor is approximately 1.94 km in length and approximately 4.1 ha in area. The total area of the site including the station, car park and railway corridor is 10ha

The proposed station and car park is bound to the north and east by Headbolt Lane. The A506 is located to the west, whilst to the south is the railway corridor that is operated by Northern Rail, which runs in a south-west to north-east alignment. The proposed station and car park lie approximately 900 m north-east of the centre of Kirkby.

The proposed station and car park site is located on predominately greenfield land with residential properties located to the north of Headbolt Lane and to the south adjacent to the existing railway line. The railway corridor between the existing Kirkby Station and the proposed new station is bound by residential areas to the south and north.

Kirkby Brook runs in an east-west direction across the proposed station and car park site. Kirkby Brook continues west and flows into Simonswood Brook which runs in a north-south direction under the railway corridor works to the east of the proposed station and car park site.

Figure 1: Site location plan (to scale at A3)



2.2 The Headbolt Lane Scheme

2.2.1 Overview of the Proposed Scheme

The proposed station and car park comprises the following elements:

- a new station located on land at Headbolt Lane;
- a new 300 space car park and associated structures (signage, waiting shelters and car park lighting) and to service the new station;
- bulk supply point and substation to accommodate electrification of rail corridor upgrades and for the new station;
- new vehicular and pedestrian access including two footbridges over Kirkby Brook and a road bridge to access each section of the car park; and
- associated landscaping.

Works to the railway corridor comprises the following:

- railway line upgrade to a twin track and associated infrastructure to extend the Merseyrail electrification to the proposed station (including the extension of the existing third line electrification network and a new substation); and
- decommissioning works to the existing Kirkby Station.

Further scheme details are provided below.

2.2.2 Existing Kirkby Station works

The existing Northern Rail platform at Kirkby will be decommissioned, made safe from public access and partially removed. The Kirkby station will remain as per the existing arrangement, and the walkway that currently connects to the Northern Rail platform will be removed. The eastern end of the Merseyrail platform will be fenced off to stop public accessing the operational railway.

2.2.3 Rail Corridor Works

The existing rail corridor comprises a single line. The Merseyrail network will be extended east from the existing terminating station at Kirkby by removing the existing buffer stops and connecting these with new trackwork. A new railway switch will split the tracks from a single alignment into a new twin-track arrangement.

As part of these works the existing embankment will be widened and strengthened to accommodate the twin track arrangement. To facilitate the new twin-track arrangement, vegetation removal will be required along the existing railway corridor.

As part of the rail corridor works, work is needed to be carried out on Underbridge 55 to remove the existing bridge pier and foundations and replace

with a portal frame pier (crossing the A506 and County Road). Works to Underbridge 56 are also required where a concrete trough will be placed on the existing bridge to house the new track alignment and to strengthen the bridge (crossing Simonswood Brook and a public footpath).

The existing Merseyrail third rail network will be extended to the proposed station. The existing Northern Rail network will be shortened as a result of it stopping up at the proposed Station rather than its current stopping up point at the Kirkby Station.

The entire length of the rail corridor will be bound by fencing which will be 1.8 m high. This fencing will be a mixture of existing fencing which already meets the height requirements and new fencing to ensure safety along the whole route of the major rail corridor.

The total distance of the major rail corridor works (including the third rail extension works) will be approximately 1.9 km.

2.2.4 Substation

To facilitate this third rail extension, a new substation is required that will be located in the vicinity of the proposed station and car park site. The new substation will occupy an area of land to the west of the proposed Station and will amount to a total footprint of 0.09 ha.

2.2.5 Proposed Station

A proposed station interchange will be provided at Headbolt Lane. This proposed station will comprise three platforms, with two platform faces (Platform 1 and 2) serving Merseyrail located on the northern side of the rail corridor and a single platform face (Platform 3) serving Northern Rail on the south side of the rail corridor. Buffer stops will be provided to Merseyrail and Northern Rail to indicate the two Train Operating Companies. The platforms will be connected by a cross station access platform, replicating the operational functionality at the existing Kirkby station. This cross-station access platform will run adjacent to an obscuration screen, which will be installed between the buffer stops of each railway line so that oncoming trains are not affected by lighting produced by oncoming trains in the opposite direction. This obscuration screen will be approximately 2.9 m in height and 20 m in length.

A single station building will be provided, with mess facilities for station staff and train crew. The station building will be staffed and will have facilities for customers to purchase tickets. Ticket vending machines will be available on the platform for customers who approach the station on foot from south of the railway line. The proposed station building will have a height of 8 m and total footprint of approximately 190 m² and will be finished in brickwork and white render with extensive glazing.

2.2.6 Proposed Car Park

The approximate area for the station and car park is 5.6 ha and comprises approximately 300 spaces. The proposed car park will be split into two; the main car park consisting of 270 spaces located north of Kirkby Brook, and an accessible car park consisting of 30 spaces (15 accessible bays and 15 enlarged bays) located south of Kirkby Brook adjacent to the proposed station building. A short stay pick-up / drop-off area is also proposed outside the station building, with space for four vehicles. Covered parking facilities for 100 cycles will be provided.

2.2.7 Vehicular Access

A new signalised junction is proposed on Headbolt Lane providing access to the proposed station and car park site. The junction will be positioned at the existing junction between Fallowfields and Headbolt Lane, creating a 'four-armed' junction. Controlled pedestrian crossings are to be provided on each 'arm' of the junction. A proposed internal road links the junction with Headbolt Lane to the proposed station forecourt, which includes two bus stops and a drop-off area for four private vehicles. A new road bridge is required to span the access road over Kirkby Brook.

2.2.8 Pedestrian/ Cycle Access

The main access road includes 2 m footways on each side and a bi-directional 3 m cycleway on the east side of the access road. The cycle route is diverted around the accessible parking area to provide a more direct route to cycle storage areas at the proposed station and avoid conflicts with pedestrian movements. Where pedestrian routes intersect access roads, zebra crossings are provided to promote pedestrian priority through the site. The existing footpath which crosses the site from east to west will be diverted and incorporated into the site access proposals. The existing western footbridge over Kirkby Brook shall be removed and the eastern footbridge retained. An additional footbridge is proposed over Kirkby Brook to the east of the station building.

2.2.9 Drainage, Landscaping and Lighting

The proposed station and car park surface water drainage has been divided into two networks, north and south of Kirkby Brook. Track drainage is also proposed as part of the proposed station where drainage catch pits 1.1 m x 0.6 m will be used along the track section at the proposed station.

Landscaping will form an important part of the proposed Scheme and will consist of a combination of hard landscaping, soft landscaping and street furniture. Landscaping and planting will also be utilised along Headbolt Lane to screen the proposed Scheme from nearby receptors and will be used trackside, especially on the widened embankment, to also help screen the rail corridor works from nearby receptors.

Lighting for the proposed station and car park will typically take the form of post-mounted low powered LED lighting on columns up to a height of 5 m above

ground level. Footbridge lighting will not use lighting columns, instead handrail level lighting will be used.

3 Assessment Methodology

The Environmental Statement has been prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. In undertaking the EIA, current best practice has been followed, and in particular the guidance set out in the Institute of Environmental Management and Assessment (IEMA) Guidelines for Environmental Impact Assessment¹.

The EIA assesses the environmental impacts of the proposed Scheme at key stages of both the construction and operation phases. Where appropriate, these are then compared to the pre-construction (i.e. the current baseline), and if relevant, to the situation prevailing in the future in absence of the proposed Scheme (i.e. the projected future baseline).

3.1 Sources of Information and Data

A wide range of baseline data on the local environmental conditions has been used for the purposes of the assessment as well as future and forecasts. Data has been gathered from a combination of sources, including:

- published documentary information from a variety of sources including historical and contemporary records;
- field survey information including background noise levels, ecological features, landscape character and traffic levels on the road network.
- other survey information including topographic surveys, aerial photography, and geotechnical data;
- data from statutory and non-statutory stakeholders; and
- industry modelling software including traffic and air quality

More detailed information is included in each of the topic sections, as required, to describe the aspects of the environment that have the potential to be significantly affected by the proposed Scheme. The technical chapters of the ES (Chapters 4 - 10) describe their spatial scope, which includes the rationale for determining the specific area within which the assessment is focused. The study areas take into account the nature of the potential impacts, and the locations of potentially affected environmental resources and receptors.

3.2 Temporal Scope: Baseline and Assessment Years

The EIA assesses the environmental impacts of the proposed Scheme at key stages of both the construction and operation phases. Where appropriate, these are then compared to the pre-construction (i.e. the current baseline), and if relevant, to the situation prevailing in the future in absence of the proposed Scheme (i.e. the projected future baseline).

¹ IEMA Guidelines for Environmental Impact Assessment, 2004.

The ‘current baseline year’ is taken as 2021, as this is the period of time where the majority of data collection in support of the EIA occurred. Assessment years that are considered vary between topics (the reasons for this are set out in each technical chapter), but generally include:

- current baseline (2021) – the baseline describes the existing conditions on site without the proposed Scheme;
- future baseline in the absence of development (2036);
- construction phase(s) – Phase 1: 2021-2023
- operational phase (2024) – the proposed Scheme is anticipated to be operational in 2024.

The proposed Scheme does not have an expected end of life and it is not anticipated that the proposed Scheme would be demolished at any point in the foreseeable future. If demolition did occur of any part of the proposed Scheme, effects would be expected to be similar to those arising during construction, with appropriate controls in place. If necessary, depending on changes to the baseline or surrounding receptors, the environmental effects of demolition would be considered as part of the relevant regulator processes surrounding any future demolition. As such, the EIA does not consider a decommissioning of the proposed Scheme.

3.8 Impact Assessment and Significance Criteria

A comprehensive assessment of the likely significant effects on the environment arising from the proposed Scheme has been undertaken. Effects can be adverse or beneficial and the EIA uses a scale to show whether effects are significant or not:

- negligible means that effects would not be noticed or barely noticed;
- minor means effects would be slight, very short or very local;
- moderate means an effect would be more than a slight, very short or very local effect and this may be considered ‘significant’; and
- major means that an effect would be considerable, over a long time, over a large area and perhaps result in a breach of legislation or recognised standards to protect the environment. This would be considered ‘significant’.

Where significant effects are identified in an EIA, measures to prevent or avoid, reduce or remedy these effects are proposed and any remaining residual effects are identified.

3.3 Limitations and Exclusions

The technical chapters of the ES (Chapters 4 - 10) detail any limitations and exclusions associated with the respective assessment. These largely relate to limitations associated with modelling, the level of detail available about the proposed Scheme at this early outline stage or the validity of third party data received and utilised within the assessment. None of the limitations identified would be expected to significantly affect the outcome of the assessment.

4 Site and Surrounding Area

A detailed description of the site and surrounding area is provided in Chapter 2: Scheme Description, and in each technical chapter in the ES.

The key environmental constraints and nearby receptors are summarised in this section.

There are 18 designated heritage assets within 1 km of the proposed Scheme boundary, the closest of which are:

- six Listed Buildings associated with St Chad's Church and grounds and St Chads Park, notably Church of St Chad (Grade II* Listed Building) located approximately 750 m to the south-west of the proposed station and car park site; and
- Carter Arms Public House Waverley House (Kirkby Conservative Club) and 1 and 3 Mill Lane (Grade II Listed Buildings) are located adjacent to the existing Kirkby railway station.

Kirkby Brook/Mill Brook Local Wildlife Site (LWS) is a non-statutory ecological designated site which is located adjacent to Simonswood Brook situated below the existing elevated railway line and runs through the proposed station and car park site. One further non-statutory ecological designated site is located within a 2km of the proposed scheme is Northwood Forest Hills LWS which is located approximately 640 m to the east.

Kirkby Brook runs through the proposed station and car park site and is designated by the Environment Agency as a main river. Kirkby Brook feeds directly into Simonswood Brook which is located approximately 300 m to the west of the proposed station and car park.

Simonswood Brook is a designated Water Framework Directive (WFD) waterbody (GB112069060630) and has an overall WFD classification of Moderate (Ecological score of Moderate and Chemical score of Fail). The watercourse flows under the existing railway bridge (Underbridge 56).

There are areas of Flood Risk Zones 2 (between a 1 in 100 and 1 in 1,000 annual probability of river flooding) and 3 (1 in 100 or greater annual probability of river flooding) on the land immediately adjacent to Kirkby Brook within the proposed station and car park site. The rail corridor is situated entirely within Flood Zone 1 (land assessed as having a less than 1 in 1,000 annual probability of river flooding).

There are two historic landfills within 1 km of the proposed Scheme boundary; Bank Lane site, located adjacent to the A506 (Bank Lane) approximately 600 m to the north of the proposed railway corridor works and Stopgate Lane located at Simonswood Industrial Estate approximately 980 m to the east of the proposed station and car park site.

5 Alternatives

5.1 No Development

Best practice guidance in EIA suggests that the assessment should consider the evolution of the Site in the absence of the proposed Scheme i.e. the ‘do-nothing’ or no development alternative.

The ‘do nothing’ alternative would result in the site remaining in its current state and the capacity of the Merseyrail services remaining the same.

5.2 Alternatives Considered

The purpose of the proposed Scheme is to increase the capacity of the Merseyrail service and provide a new station and car park facilities.

Given the need for the proposed station and car park to be located along the existing rail corridor, and the limited availability of land adjacent to the railway corridor that can accommodate the scale of the station and car park proposed, no other sites have been considered as alternatives.

Four design options were considered for the proposed Scheme, as described below:

- Option 1 – surface car park with access for general traffic and buses to the north.
- Option 2 – a main vehicular access to the west of Fallowfields. Buses entering the station utilise the same vehicular access. All parking is consolidated to the east of the access requiring culverting of Kirkby Brook;
- Option 3 – split level car park located to the south of Kirkby Brook. Access into the proposed station and car park gained via two new accesses to the east on Headbolt Lane; and
- Option 4 – multi-storey car park located to the south of Kirkby Brook with all vehicular access from the north of the proposed Station adjacent to Fallowfields;

Options meetings were carried out, attended by Arup, Seed Architects, BGCL, Network Rail, Merseytravel/ Liverpool City Region Combined Authority and Merseyrail. A preference for Option 1 emerged, which was felt to offer the best value solution for the site and minimised the impact on Kirkby Brook. The other 3 options were discounted for various reasons including adverse impacts of significant culverting of Kirby Brook (Option 2 and Option 3), concerns around user safety and crime, and visual impacts associated with a multi-storey car park (Option 4) and concerns over the location and form of access junctions (Option 3).

6 Summary of Main Environmental Effects

This section sets out the main environmental effects that are anticipated from the proposed Scheme.

6.1 Traffic and Transport

Chapter 4: Traffic and Transport considers the local road network, pedestrian and cycle accessibility, public transport, highway safety and parking.

Traffic models and a range of baseline data was utilised to estimate impacts on the local road network as a result of the proposed Scheme. Due to the ongoing impacts of Covid-19 on travel behaviour, it is not considered that traffic surveys undertaken at this time would be representative of typical traffic levels.

Alternative sources of data have therefore been agreed with KMBC to inform the baseline traffic flows, which include survey data from January 2014 and January 2019.

The following receptors are considered to be most sensitive to potential impacts as a result of the proposed Scheme:

- The Star Early Years Centre, Shevington's Lane;
- Mill Farm Playground, Boyes Brow;
- All Saints Catholic High School, A506 County Road; and
- Eastcroft Park Primary School, Hollinghurst Road.

Construction

The number of vehicle movements during construction is not anticipated to have a significant impact on the highway network. The results of the assessment indicate that all links show forecast increase of less than 10% in overall traffic volumes during the construction phase. The magnitude of impact arising from the increase in total traffic is considered to be 'very low'.

Where there are receptors classified as 'high' sensitivity as outlined above, the increase in construction traffic will result in a 'minor' effect with regards to 'severance', 'driver delay', 'pedestrian delay', 'pedestrian and cycle amenity', 'fear and intimidation' and 'accidents and safety', which is not considered to be significant.

Operation

The results of the assessment indicate that all count locations, excluding the Site Access, show a predicted increase in Annual Average Daily Traffic of less than 30%. There are no forecast increases in Heavy Goods Vehicles in any location. The magnitude of impact in all count locations during the operational phase, excluding the Site Access, are considered to be 'very low'.

The only count location that experiences an increase in Annual Average Daily Traffic over 30% is the Site Access. Due to this being a new link, an Annual Average Daily Traffic increase of 100% will occur in both the opening and future years. However, this would be expected from a new Site access and is not considered to be a significant impact.

Further specific assessment was undertaken to understand the potential impacts of the proposed Scheme on Headbolt Lane, due to its sensitivities and anticipated traffic increase. This was undertaken in line with IEMA guidance. Specific assessment was undertaken in relation to severance, driver delay, pedestrian and cycle amenity, fear and intimidation, and hazardous loads. Potential effect significance was considered to be minor adverse to negligible and therefore non-significant.

In regard to Pedestrian delay, it is considered that the proposed Scheme will have a 'low' beneficial impact on pedestrian delay on Headbolt Lane. When combined with the 'high sensitivity' of this link, the proposed Scheme is considered to have a 'moderate' beneficial effect on pedestrian delay, which is considered significant. As such, the scheme is proposed to have a significant positive impact to pedestrian delay on Headbolt Lane.

Overall, the assessments conclude that the level of traffic generated by the proposals would not have any adverse significant effects in terms of the criteria assessed, for both construction and operation. There would be a significant beneficial impact in regard to pedestrian delay on Headbolt Lane.

6.2 Air Quality

Chapter 5: Air Quality has considered the effects from construction (traffic, machinery and dust) and from operation traffic on air quality.

Traffic data and forecasts from the Traffic and Transport assessment were used as the basis in the Air Quality Assessment. In addition, data from local air quality surveys was also considered in the baseline conditions. Data was considered from five survey sites for NO₂ within 2 km of the proposed Scheme at the junction of County Road and Old Rough Lane.

KMBC have not declared any AQMAs, the nearest AQMA to the proposed Scheme is 3 km east (Liverpool City AQMA declared due to exceedances of the annual mean NO₂ objective).

Construction

Sensitive receptors were identified as mainly residential dwellings within 20 m of the site boundary. There are no designated ecological receptors sensitive to dust within 50 m of the site boundary or within 50m of routes used by construction vehicles up to 500 m from the site entrance, and therefore the sensitivity of the area to ecological impacts is negligible.

For construction, the assessment took a precautionary approach due to the long duration of works close to receptors, and as such applied a sensitivity value of

‘medium’ to nearby residential receptors in relation to impacts from construction dust. However, with the adoption of appropriate best practice mitigation measures as outlined in the Construction Environment Management Plan in place, it is considered that there is likely to be a negligible effect which non-significant as a result of dust-generating activities on site.

Operation

The predicted pollutant concentrations (NO₂, PM₁₀ and PM_{2.5}) from the assessment of operational traffic were modelled and compared to UK industry guidance. There were no exceedances of the annual mean NO₂ objective predicted as a result of the proposed Scheme and all changes were considered to be negligible. All modelled changes in annual mean PM₁₀ and PM_{2.5} concentrations were considered to be negligible. Overall, all air quality impacts are predicted to be negligible and non-significant, during the operational phase therefore no mitigation is proposed.

6.3 Noise and Vibration

Chapter 6: Noise and Vibration presents an assessment of the noise and vibration impacts of the proposed Scheme.

Traffic data and forecasts from the Traffic and Transport assessment were used as the basis for the Noise and Vibration assessment.

The proposed Scheme is located in an urban environment where the daytime noise climate is dominated by road and rail traffic noise. Road traffic is less busy at night-time but remains a prime source of noise, together with less frequent rail movements.

Construction

Noise levels from construction activities taking place during the day are predicted to be below the adopted threshold values for a potential significant effect at all assessment locations. In addition, noise levels due to platform construction and road rail access points during the evening and weekend period, and during night-time construction are predicted to be below the adopted threshold values for a potential significant effect at all assessment locations. As such, no significant effects are predicated as a result of these construction activities.

Major construction activities taking place during evening and weekend period along the rail corridor (earthworks widening and plain line install) are predicted to exceed the adopted thresholds at a number of assessment locations: Deerbolt Way, Deerbolt Crescent and Hillpark Crescent, Rowan Drive and Beech Close, County Road, Langton Road; and Headbolt Lane (between Southcroft Drive and Langton Road). Taking into account the noise levels and the durations of the activities in question, these are considered to be temporary adverse significant effects.

Noise levels from other activities taking place during evening and weekend period along the rail corridor (devegetation, track drainage, cable routing, LOC/signal

and hardstandings, underbridge works) are also predicted to exceed the adopted thresholds at a smaller number of assessment locations, indicating potential significant effects at properties on: Deerbolt Way, Deerbolt Crescent and Hillpark Crescent, Rowan Drive and Beech Close, Fern Close; and County Road (N). The impacts are predicted to be above the lowest observed adverse effect level but they are below the adopted threshold values for a potential significant effect. As such, no significant effects are predicated as a result of these construction activities but need to be mitigated and minimised as far as practicable.

In regard to night-time construction noise, activities taking place along the rail corridor (earthworks widening, plain line install, devegetation, track drainage, cable routing, LOC/signal and hardstandings, rail systems installation) are predicted to exceed the adopted thresholds for a potential significant effect at assessment locations representing: Deerbolt Way, Deerbolt Crescent and Hillpark Crescent, Rowan Drive and Beech Close, County Road, Appleton Road, Fern Close and Limetree Road, Headbolt Lane (between Southcroft Drive and Langton Road), and Boyes Brow and Buttermere Close. The predicted noise levels from these activities exceed the threshold values for a potential significant effect and are therefore assessed as temporary adverse significant effects.

In regard to vibration, all sensitive buildings are at least 20 m away from any potential piling works; therefore the likely vibration levels at these buildings will be well below the threshold for potential cosmetic damage and for human exposure. The construction vibration effects from piling have therefore been assessed as a minor impact and are therefore not a significant effect. The calculated level of vibration during vibratory compaction may be clearly perceptible to people within their houses when the works are at their closest. However, the human disturbance effects associated with this level of vibration exposure could be tolerated by appropriate liaison with the building occupants providing prior warning to any works. The construction vibration effects from vibratory compaction have therefore been assessed as not significant.

There is anticipated to be an increase in noise levels on Headbolt Lane due to construction traffic noise. However, the short-term change is less than 3 dB and noise levels remain below a significant observed adverse effect level as classified by the Noise Policy Statement for England. Therefore, the impact is classified as very low and non-significant.

Overall, in relation to construction noise and vibration impacts, significant impacts are reported in relation to major construction activities taking place during evening and weekend period along the rail corridor (earthworks widening and plain line install), and night-time construction activities taking place along the rail corridor (earthworks widening, plain line install, devegetation, track drainage, cable routing, LOC/signal and hardstandings, rail systems installation).

Operation

During operation, the proposed realignment of track will bring freight approximately 5 m closer to dwellings around Fern Close. This realignment of the track will increase freight noise levels at these dwellings by around 1 dB. However, the overall noise level due to freight trains over the course of the day at

the closest dwellings, is below the noise level experienced from road traffic. Furthermore, the noise levels due to passenger rail traffic will decrease due to the proposed Scheme. As such, it is anticipated that the change in overall noise level due to these construction activities would be negligible and non-significant.

The direct noise impacts due to rail noise from the proposed Scheme in operation, along with traffic on surrounding roads, have been predicted for all assessment locations. During the day and night, predicted operational noise levels to nearby properties in general are expected to experience either a 'very low' increase in noise (properties on Fern Close, Limetree Road and Headbolt Lane), or a 'very low' or 'low' decrease (properties on Deerbolt Way, Deerbolt Crescent, Hillpark Crescent) in noise. As such, this would result in a non-significant impact. Properties on Rowan Drive facing the railway will experience a decrease in overall rail noise levels due to the change from diesel to electric rolling stock. This is identified as a beneficial significant effect.

Noise from stationary building services plant, including the proposed substation, will be controlled through design to achieve acceptable noise criteria relative to the existing baseline noise levels at the closest noise sensitive receptors. As such, the impacts from these changes are likely to result in non-significant impacts and would be addressed through the implementation of a standard planning condition.

Noise from the public address (PA) system will aim to be controlled through design to achieve acceptable noise criteria relative to the existing baseline noise levels at the closest noise sensitive receptors. Analysis has been undertaken to understand predicted PA system sound levels at the closest dwellings (Fern Close) during a typical worst case daytime and night-time period respectively. Predicted sound levels from the PA system are below baseline ambient noise levels at Fern Close but it is likely they would be close to or above background (LA90) noise levels for the relevant time period and have characteristics that could be more intrusive than continuous noise sources. As such, this is assessed as an adverse impacts and a potential adverse significant effect.

An assessment has been undertaken of the likely noise impact on dwellings along Headbolt Lane of vehicles using the 300-space car park. The closest row of parking spaces to the dwellings on Headbolt Lane is at a distance of approximately 40 m. Even assuming that all vehicles use this closest row, the cumulative sound level from low-speed vehicle movements over a typical daytime period is significantly below the noise level from traffic on Headbolt Lane, which lies between the dwellings and the car park and is the predominant source of noise for these dwellings. Considering the above, noise effects at dwellings along Headbolt Lane from car park movements are identified as not significant. In addition, in relation to the bus interchange noise effects at the closest dwellings at Fern Close and Appleton Road from buses using the bus interchange are identified as not significant.

Operation of the proposed Scheme will result in changes to traffic flows on nearby roads (primarily cars travelling to and from the new station car park). The estimated traffic change is predicted to be less than +20%, indicating a probable change in noise level of less than +1 dB and therefore is a negligible impact. All

calculated impacts are negligible or less, and therefore indirect noise effects due to traffic increases on surrounding road networks are identified as not significant.

6.4 Ecology

Chapter 7: Ecology addresses all known and potential important ecological habitat and features that could be affected by the proposed Scheme.

A field survey of the Site was originally undertaken in July 2020. A follow-up survey was carried out in March 2021 to include additional areas of the railway corridor. Habitats were identified using the standard Phase 1 Habitat survey methodology. Baseline data regarding protected species and designated site records within a 1 km radius surrounding the Site was collated. Utilising this information a Preliminary Ecological Appraisal was drafted.

In addition, the habitats identified were assigned a UK Habitat Classification habitat type, which underpin the Biodiversity Net Gain (BNG) calculations.

No statutory designated sites were identified within the Site or within 2 km radius surrounding the Site. Eleven Local Wildlife Sites (LWS) and one Nature Improvement Area were identified within 1 km radius surrounding the Site. Of these twelve, two are within the site;

- Kirkby Brook, including Mill Brook LWS which Runs underneath the existing rail track bridge (Millbrook Bridge) within the Site; and
- Mill Brook, Westvale LWS which Runs underneath the existing rail track bridge (Millbrook Bridge) within the Site.

Northwood Forest Hills LWS, Land East of Canal, North of Wango Lane LWS, River Alt and M57 Corridor Nature Improvement Area, and Wango Lane Wetland LWS are all adjacent to the site.

During the field survey, the habitats identified are considered to support neutral grassland with species indicative of neutral conditions (e.g. tall ruderal vegetation, semi-improved neutral grassland, poor semi-improved neutral grassland, amenity grassland, dense scrub and bare ground). Semi-mature plantation woodland was recorded along the north and south rail embankments of the railway corridor to the southwest of Kirkby station. Scattered semi-mature broadleaved trees were recorded within dense scrub between Kirkby station and Headbolt Lane. A line of mature poplar trees was recorded along the southern rail boundary with Kirkby municipal golf course. An area of coniferous woodland was recorded at the western extent of the Site on the railway corridor. Himalayan balsam was recorded along the banks of Kirkby Brook. Japanese knotweed was recorded to the north-east of the existing Kirkby station.

In relation to protected and notable species, desk study results showed that the following records were found within 1km of the site;

- four notable plant species; Fringed water-lily, Bluebell, Purple ramping-fumitory and True fox-sedge,
- one species of bat; common pipistrelle,

- Water vole records within Simonswood Brook,
- Red squirrel within the housing estate to the north of the site,
- Brown hare to the north of the site,
- one record of a badger,
- four records of hedgehog,
- Great crested newt and common frog

In addition, species surveys were undertaken on site. In relation to bats, dusk emergence and dawn return surveys and tree surveys were undertaken. No confirmed bat roosts were identified on the site, but there were signs of areas suitable for roosting and foraging recorded on and adjacent to the site and therefore bats were taken forwards for further assessment. Survey results also stated that there is potential suitable habitat for Water Voles, Badgers, Hedgehogs, Breeding Birds and Amphibians which were all been taken forwards for assessment.

Construction

The potential impact of construction activities on important ecological features include: Direct mortality of species; Habitat loss; Habitat fragmentation and physical restriction to species movement; Disturbance from noise, vibration, light and dust; and Habitat degradation due to pollution, changes to hydrology, sedimentation.

In regard to the identified LWS's and Nature Improvement Area as identified within 2km of the Site, there are not predicted to be any direct impacts. Potential indirect impacts across all areas are considered to be negligible and not significant, with mitigation measures outlined including those to be outlined in the Construction Environment Management Plan e.g. pollution prevention controls.

The Biodiversity Net Gain assessment details habitat retention, enhancement, loss and creation within the site. This outlines that existing area of Grassland – Other neutral grassland (2.09 ha), will be removed and will not be able to be replaced on site. The impacts are considered to be minor adverse and significant at the local level.

The effects of habitat loss of bramble/mixed scrub and other woodland broadleaved across the Site following implementation of the design is however considered to be negligible and not significant.

In regard to habitat enhancement the following will be provided as detailed below:

- areas of retained grassland which were recorded to be poor semi-improved will be enhanced by seeding with a native grassland mix.
- native species rich hedgerows will be planted on the periphery of the site to provide connectivity through the site and additional areas for foraging and nesting birds, foraging and commuting bats and habitat for hedgehog and amphibians.

- in addition, scattered broadleaved trees will be planted within the hedgerow and along the peripheral boundaries.

The potential effect of disturbance to protected and notable species through increased lighting, noise and construction activities is considered to be negligible, and not significant. Surveys and baseline studies were carried out to understand the impacts on protected and notable species, and found that potential impacts such loss of habitat and disturbance would be mitigated and with these measures in place the effect of potential impacts would be negligible and not significant.

Operation

The potential effects of operational activities on important ecological features include:

- habitat degradation including pollution, sedimentation and / or changes to hydrology;
- disturbance to species and habitats; and
- habitat fragmentation and physical restrictions to species movements.

During operation, there is the potential for hydrological impacts on Kirkby Brook and Mill Brook due to changes in drainage regime, which may impact on the ecological functioning of the brooks. However, these impacts will be mitigated through the design of the drainage system and are not considered to be significant.

In regard to impacts on habitats, operational impacts considered include the effect of pollution and change in air quality on retained habitats. However, drawing on findings from the Flood Risk and Air Quality chapters, which do not indicate that there would be significant operational impacts, infers that the potential impacts to ecological assets would be negligible and non-significant.

The scheme has been designed to limit the operational impacts on species, for example appropriate landscaping, lighting scheme, and new planting opportunities. As such, there is not expected to be any significant impacts to species as a result of the proposed Scheme during operation.

6.5 Landscape and Visual Impact Assessment

Chapter 8: Landscape and Visual Impact Assessment presents an assessment of potential impacts on townscape character and visual amenity associated with the proposed Scheme.

A desktop review and a field survey was carried out to inform the baseline conditions, and the methodology was agreed with KMBC's Landscape Officer

The proposed station and car park site currently comprises an area of open amenity greenspace approximately 900 m north-east of the centre of Kirkby. Kirkby Brook, flows in a south-westerly direction through the Site before joining Simonswood Brook, which flows north-south through Millbrook Park Millennium Green to the west. There are no designated sites within the study area but there

are some small areas of National Forest Inventory Woodland (NFI Woodland) either side of the railway line within Millbrook Park Millennium Green and within the amenity greenspace near Dale Lane 500 m east from the eastern end of the proposed Scheme. The site is valued by the local community and is considered to be of medium landscape value.

The extent of visibility for the proposed Scheme is mainly determined by the distribution of buildings and mature vegetation surrounding the Site. Given the relatively flat nature of the landform and scale of development proposed, views of the proposed Scheme will be mainly restricted to those properties close to the application site.

Construction

The site is valued by the local community and is considered to be of medium landscape value. As open greenspace, it is of high susceptibility to the type of development proposed. When combined with the medium value, the sensitivity of the Site is considered to be high. This means that the attributes that make up the character of the landscape offer limited opportunities for accommodating the proposed change without its key characteristics of openness and rolling valley landform being fundamentally altered, leading to a different landscape character.

Construction operations will give rise to a large magnitude of effect on the landscape. The activity from construction machinery, movement and clustering of vehicles and workforce on site, as well as and changes to the landscape resulting from the changes to the landform to accommodate the car park and vegetation will substantially alter the character and appearance of the amenity greenspace. Most of the site will be affected, therefore the magnitude of landscape change during construction will be high. Combined with the high sensitivity of the landscape, the level of effect during construction will be major adverse and significant. This effect is considered significant but will be short term and temporary.

Major adverse visual effects during the construction phase are anticipated where these sensitive visual receptors will experience a high magnitude of change in their view. Such as effects would also be considered as significant. This includes occupants of residential properties and road users along or close to Headbolt Lane. Moderate adverse visual effects during construction are anticipated where views are more distant, oblique and/ or partially obscured by intervening vegetation, where again they would be considered to be significant.

Operation

Effects occurring during the operational phase are considered to be long term but largely reversible. At a national and regional landscape character level there are not anticipated to be any adverse effects from the proposed scheme.

At a local level, the landscape character assessment is divided into year 1 and year 15 assessment. At year 1, the proposed Scheme will completely change the character and appearance of the Site, therefore the magnitude of landscape change during operation will be high. Combined with the high sensitivity of the

landscape, the level of effect on local landscape character during operation will be major adverse and significant

During year 15, although significant in the short term, the major adverse effects anticipated at Year 1, will lessen as the planting matures and the proposed Scheme becomes better integrated into its surroundings. Based on this, by Year 15 the effects will reduce to moderate adverse and significant.

In relation to visual effects in year 1, on completion of the proposed Scheme, the change in appearance of the Site from open amenity green space to a station with its associated car park and infrastructure represents a substantial alteration in the appearance of the Site. Significant visual effects are likely to be experienced by residents and road users closest to the Site, including the following:

- along or close to Boyes Brow (VP 01);
- along or close to Headbolt Lane (represented by VP 02, VP 03 and VP 04);
- along or close to Lime Tree Road and Fern Close (VP0 5); and
- close to the existing railway underbridge on the A506 County Road (VP 06).

The visual effects in year 1 are anticipated to be moderate to minor adverse, and significant. No major visual effects are anticipated.

In relation to visual effects in year 15, with the maturing of the proposed landscaping around and within the Site, the moderate adverse effects identified above will reduce to minor adverse. The exception will be for occupants of residential properties and road users along or close to Boyes Brow (VP 01), who in the absence of landscape planting, will continue to have open views across the existing open greenspace to the security fence, retaining wall and embankment along the railway line upgrade. The effects on these receptors will remain moderate adverse. This is considered significant.

Landscaping proposals show a variety of tree and shrub and native hedgerow planting across the Site, which is designed to help integrate the proposed Scheme into its surroundings and lessen any landscape and visual effects. At one viewpoint (Boyes Brow) the introduction of mitigation planting will reduce the visual impact from moderate adverse to minor adverse. However, the significant moderate effects at other locations (Viewpoint 02: Junction of Heathfield Drive with Headbolt Lane and Viewpoint 03: Junction of Fallowfield Lane with Headbolt Lane) would be unchanged after the introduction of mitigation planting.

6.6 Flood Risk

Chapter 9: Flood Risk presents an assessment of potential impacts on flood risk associated with the proposed Scheme.

The flood risk baseline data for the study area has been obtained from publicly available desktop resources and hydraulic modelling.

EA Flood Maps for Planning indicates that the Site is located predominantly within Flood Zone 1 (less than a 1 in 1,000 year annual probability of river or sea

flooding). Small parts of the Site are located within Flood Zone 2 (between 1 in 100 and 1 in 1,000 annual probability of river flooding or between 1 in 200 and 1 in 1,000 annual probability of sea flooding) and Flood Zone 3 (1 in 100 or greater annual probability of river flooding or 1 in 200 or greater annual probability of flooding from the sea). However, these areas are concentrated within the immediate vicinity of the watercourse Kirkby Brook, which flows through the Site from east to west and is a designated EA Main River.

The EA surface water flood map indicates there is a very low risk of surface water flooding across the majority of the Site. Areas of increased flood risk are concentrated to the areas in the immediate vicinity of Kirkby Brook.

KMBCs data indicates that the Site is not at risk from groundwater or tidal flooding.

Construction

In relation to surface water flood risk, compaction of the ground caused by construction materials and vehicles and an increase in the extent of impermeable surfaces associated with elements of the proposed Scheme including car parking, station and access roads has the potential to increase surface water run-off across the Site. Surface water run-off has the potential enter Kirkby Brook and cause flooding on Site as well as downstream. However, these effects would be managed through measures set out in the outline Construction Environment Management Plan.

Measures include, but are not limited to, measures to intercept run-off from areas of construction. In addition, temporary surface water drainage will be introduced during construction and as part of the phasing plan for development, the permanent surface water drainage strategy would be introduced in advance of creation of new areas of hardstanding. As such, during construction there is not anticipated to slight adverse to neutral impacts which would be considered non-significant.

There are not anticipated to be any detrimental impacts in relation to fluvial flood risk, artificial drainage systems, groundwater flood risk or tidal flood risk.

Operation

In regard to fluvial flood risk during operation, the proposed vehicular bridge and footway bridge have the potential to constrain the flow through Kirkby Brook. However, the abutments of the bridge have been designed in accordance with flood modelling exceedance levels. The additional elements of the proposed Scheme are located outside of the flood extent and are positioned significantly higher than Kirkby Brook due the topography of the Site where the brook sits within a valley. As such, there is considered to be a slight adverse to neutral impact in regard to fluvial flood risk which is considered to be non-significant.

In regard to surface water flood risk, the hard standings created as part of the development proposals could cause an increased volume and rate of surface water run-off across the Site into the receiving Kirkby Brook when compared to the

existing situation. However, measures and the designed drainage interventions would reduce this risk and it is considered that during operation would be a slight adverse to neutral impact which is considered non-significant.

In addition, there are not anticipated to be any detrimental impacts in relation to artificial drainage systems, groundwater flood risk or tidal flood risk.

6.7 Ground Conditions

Desk-based assessments have been produced to support the assessment which cover the site and include detailed descriptions of the site and the site history. An intrusive ground investigation of the proposed station and car park site was completed between August and September 2020.

A section of the Kirkby Brook within the proposed station and carpark site is designated as a Local Geological Site (LGS). The LGS is known as Kirkby Brook Waterfall and comprises Kirkby Brook between the A506 in the west and the existing footpath to Headbolt Lane in the east.

The Environment Agency classifies the Shirdley Hill Sand Formation and Alluvium as Secondary A Aquifers, an aquifer supporting water supplies at a local scale. The Glacial Till deposits are classified as unproductive strata.

The Wilmslow Sandstone Formation and Chester Formation are classified as Principal Aquifers, an aquifer which can provide a high level of water storage and may provide water supply and/or base river flow on a strategic scale.

The site is located within a groundwater Source Protection Zone (SPZ) 3, with several abstractions located to the north and south. The nearest groundwater abstractions are located approximately 2 km to the north of the rail alignment.

The assessment of soil data concluded that concentrations of contaminants measured in the soil were below values that might be regarded as posing a risk to future site users for a commercial development.

Construction

During construction, a potential pollutant linkage has been identified relating to construction workers and adjacent site users as a result of the excavation of potentially contaminated materials, which may generate contaminated dust and vapour, or result in exposure to contamination, via dermal contact and ingestion. Ground gases may pose a risk to construction workers and adjacent site users in enclosed or confined spaces. However, the concentrations of contaminant measures in soil and groundwater were typically below values which might be regarded as posing an acute risk to construction workers. With the implementation of mitigation measures outlined in and implemented by the Construction Environment Management Plan, the magnitude of the impact during construction is assessed to be very low and not significant.

A potential pollutant linkage has been identified during earthworks as a result of the exposure of contaminated soils, which could result in a temporary increase in infiltration of rainwater and consequently an increase in the leaching of

contaminants into groundwater or allow direct run-off of contaminants into groundwater, or laterally into Kirkby Brook, where it is encountered during deep excavation. With the implementation of the mitigation measures outline by the Construction Environment Management Plan, and scheme design which will reduce infiltration in shallow soils, the magnitude of impact during construction is assessed to be very low and the effect would be negligible and not significant.

A footbridge and a road bridge will be constructed over the Kirkby Brook Waterfall LGS within the proposed station and carpark site. The bridges will span the brook and no works within the stream itself are proposed. The construction works will be undertaken outside the Environment Agency 8 m easement as far as is practicable and therefore the scheme design will not impact the LGS. The value of the receptor is considered to be low. The magnitude of impact would be low and the effect negligible and not significant.

Operation

The proposed site use means that there is little potential that site users will come into contact with the soils on site. As such, the effect during operation without mitigation is assessed to be negligible which is not considered significant.

6.8 Summary of Significant Residual Effects

The following table provides a summary of the significant residual effects as a result of the proposed Scheme, outlined in the topic assessments within Volume I: Main Report.

Significant residual effect	Nature of effects
Traffic and Transport	
<i>Construction</i>	
No significant residual effects during construction.	
<i>Operation</i>	
Improvement to local pedestrian network and crossing facilities, which will cumulatively reduce pedestrian delay.	Moderate beneficial, long term, permanent and direct.
Air Quality	
No significant residual effects during construction or operation.	
Noise and Vibration	
<i>Construction</i>	
Evening and weekend construction noise	Significant adverse, short term, temporary and direct.
Night construction noise	Significant adverse, short term, temporary and direct.
<i>Operation</i>	

Significant residual effect	Nature of effects
Operational combined road and passenger rail noise due to switch from diesel to electric rolling stock.	Significant beneficial, long term, permanent and direct.
Ecology	
<i>Construction</i>	
Loss of 2.09 ha of neutral grassland	Significant minor adverse, long term, permanent and direct
<i>Operation</i>	
No significant residual effects during operation.	
Landscape and Visual Impacts	
<i>Construction</i>	
Loss of key landscape characteristics, including openness and rolling valley landform.	Major adverse, long term, permanent, direct and indirect.
<i>Operation</i>	
Viewpoint 02: Junction of Heathfield Drive with Headbolt Lane - Moderate adverse (significant) landscape and visual effects reducing to minor adverse (non-significant) after 15 years when landscaping matures.	Long term, permanent and indirect.
Viewpoint 03: Junction of Fallowfield Lane with Headbolt Lane - Moderate adverse (significant) landscape and visual effects reducing to minor adverse (non-significant) after 15 years when landscaping matures.	Long term, permanent and indirect.
Flood Risk	
No significant residual effects during construction or operation.	
Ground Conditions	
No significant residual effects during construction or operation.	

6.9 Cumulative and Combined Effects

Chapter 11: Cumulative Impact Assessment considers the potential for cumulative effects due to the combination of two or more effects acting on one receptor, which may result in a change in the effect.

Combined effects may occur where a common receptor is being affected by two or more effects reported in different specialist assessments e.g. the two separate impacts may interact or combine to result in a combined effect. A review of the results of the specialist assessments has taken place to identify potential common receptors and residual effects which they are predicted to experience. This assessment indicated that whilst there are the potential for common receptors (especially between air quality, noise and vibration and ecology), there are not considered to be the potential for significant in-combination effects, as any combined impacts have been considered within the individual chapters as detailed within Volume I of this ES.

In addition, the ES provides an overview of the cumulative effects which may arise from the proposed Scheme when considered alongside other future developments in proximity to the Site. A total of eight other planning applications were considered in the cumulative assessment. The assessment found that there would be no significant cumulative adverse effects.

6.10 Outline Construction Environmental Management Plan

An outline Construction Environmental Management Plan (CEMP) (Appendix 2A, Volume III) has been produced and it highlights the key measures which are to be implemented during construction in order to minimise the potential impacts upon local environmental constraints and receptors.

The outline CEMP also provides a suggested structure for the detailed CEMP, which will be produced by the contractor(s) selected to deliver the proposed Scheme.

The CEMP will be designed with the objective of compliance with the relevant environmental legislation and the mitigation measures set out within the ES. With the proposed Scheme being likely to be built out over a number of phases and through a number of separate construction projects, a number of detailed CEMP's may be produced to reflect a particular phase of construction works and/or a construction contract.