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## **Transport Statement**

Thorpe Marsh Green Energy Hub

01 March 2023

1310757

**Banks Renewables**

## Document history

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# 1. Executive Summary

The applicant recognises that a large volume of HGV deliveries would be problematic for the local road network and therefore propose to build a railhead to deliver the majority of equipment to the site. This is predicted to displace over 20,000 HGV deliveries (40,000 movements).

Some HGV deliveries will be required to facilitate the construction of the railhead over a 5 month period with predicted average daily deliveries of 19 (38 movements). Once the railhead is constructed, the number of HGVs will reduce as the majority of equipment will be brought in using the rail infrastructure. For the remainder of the 36-month construction period, average daily deliveries are estimated to be 1 (2 movements) with a peak of 5 per day. This gives an overall average for the entire construction phase of 4 deliveries and 8 HGV movements per day.

During the operational phase of the development, traffic impacts are considered to be negligible with less than 1 daily delivery per day on average. Permission for the proposed Development will be sought in perpetuity, however to illustrate this further, a fifteen year period has been used for the operational phase. During this time, the average daily deliveries over the estimated lifetime of the development (at least 18 years) including construction and operation is predicted to be 2 deliveries (4 movements).

# 2. Introduction

This Transport Statement (TS) has been prepared on behalf of Banks Renewables to identify anticipated transport impacts of the proposed Thorpe Marsh Green Energy Hub on the surrounding road network in Doncaster. The Construction traffic associated with the development falls into three broad categories; namely Abnormal Indivisible Loads (AILs), Heavy Goods Vehicles (HGVs) and Light Goods Vehicles (LGVs). In order to assist in the delivery of materials to site and reduce associated vehicle movements, a new railhead will be constructed as part of the development. This TS therefore seeks to ensure all impacts on the local council and relevant stakeholder are acknowledged in order for sufficient mitigations to be implemented as the project develops.

It is expected a planning condition will be applied to the development for a Construction Traffic Management Plan (CTMP) to be prepared for approval by Local Authority post consent and prior to construction works commencing. A draft CTMP will be provided as supplementary information.

# 3. Proposed Scheme Overview

The Thorpe Marsh Green Energy Hub is located in the area of Doncaster Council, approximately 6km north of Doncaster town centre and 1.4km to the west of Barnby Dun. (Grid ref: SE594094). Adjacent to the site is Thorpe Marsh Nature Reserve to the west. The Proposed Development involves reclamation through construction and operation of a Green Energy Hub comprising of battery energy storage with associated infrastructure including inverters, transformers, access tracks and substation compound as well as fencing, security camera and cabling. This to be achieved through relocating pulverised fuel ash (PFA) within the existing Site to create a level platform and re-profiling of part of the existing PFA mound. A railhead will also be constructed to serve the Site. The new development consists of the below key infrastructure elements:

- Up to 1400MW 2hr of battery storage consisting of 788 containerised batteries with a maximum height of 3 metres. Approximately 394 Power Control Systems for the batteries containing invertors and transformers.
- 1No. 400kV and 6No. 132kV switch stations and substation buildings.

- Former railhead recommissioned to facilitate construction deliveries and material removal. *Please note that for the purposes of this Transport Statement, it is assumed that all rail infrastructure will need to be replaced. Reductions in predicted traffic levels would occur should any of the infrastructure be found to be in a suitable condition to re-use. Detailed engineering assessment will be required to confirm the extent of the rail replacement required.*
- Horizontal Directional Drill (HDD) of the 400kV export cable.
- Cable trenching.
- Re-use of existing tracks and new access tracks.
- Operational control room with office, storage and welfare facilities.
- Sustainable Urban Drainage systems including attenuation pond.
- Inverters.
- Transformers.
- Security fencing, lighting and CCTV.
- Temporary Concrete Batching Plant and construction compounds.

## 4. Existing Road Network

### 4.1. Site Access

Access to site is via Marsh Lane, shared with Thorpe Marsh GSP, which is accessed from the wider road network via its junction with Fordstead Lane. Fordstead Lane is a two lane single carriageway, which is the main link to Bentley on the west and Barnby Dun to the east of the site. All major road deliveries are expected to be delivered to site from the larger road network via the A1 (M) and M18 respectively.

Fordstead Lane has a 7.5 tonne environmental weight limit 'except for access' Traffic Regulation Order (TRO) in operation between the junction of Marsh Lane and Thorpe Bank. This weight restriction TRO is enforced for environmental reasons and is not due to the presence of any weak structures along Fordstead Lane.

It is anticipated that some minor works such as removal of street furniture within the adopted highway would be required to accommodate the delivery of some of the electrical equipment which is classed as AIL's. Any modifications will be confirmed by Swept Path Analysis and detailed as part of the Traffic Management Plan once a hauler subcontractor has been appointed.

## 5. Construction Traffic

### 5.1. HGV Vehicle Routeing

Due to the weight restriction imposed on Fordstead Lane it is assumed that any HGV traffic associated with construction of the development will enter and exit the site from the west. As a result, HGV traffic will be routed via Arksey and Bentley. The route via Arksey crosses a railway line via the level crossing on Station Road in Arksey. This crossing is frequently down as the railway line being crossed is the east coast main line. It should be noted that the proposed development is not likely to increase rail traffic on the east coast mainline and so should not cause an increase in the frequency of the rail crossing being down.

HGV access to the strategic road network is anticipated to be via the A635 which joins the A1(M) at junction 37. Access can also be achieved via the A638 to the M18 and via the A19 to junction 34 of the M62. Varying the HGV

route will dissipate traffic on the local road network until the railhead is constructed. See Figure 6.1 and Appendix A for full HGV traffic routing details.

Source: Natrual Power

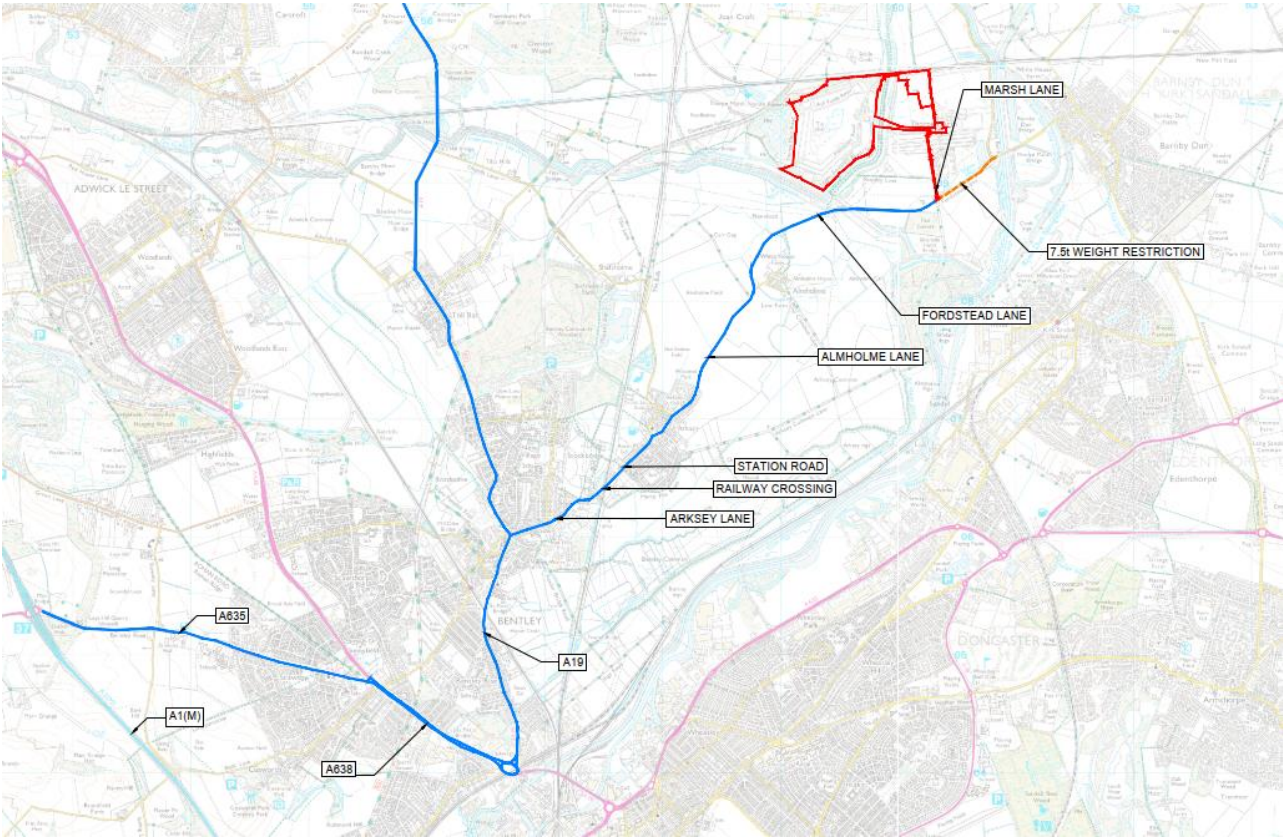


Figure 5.1: HGV Delivery Routes

As described in Section 3, a railhead will be commissioned as part of the scheme. Integrity engineering assessments will be performed to ascertain if any of the existing rail infrastructure can be re-used. This assessment assumes that **all** of the rail infrastructure will require replacement (track ballast, rails and sleepers). Therefore, the quantum of traffic movements detailed in this report is conservative and maybe reduced following completion of the railhead integrity engineering assessments.

This railhead will be used for the import for the majority of the bulk material deliveries into the site, significantly reducing the number of HGV vehicle movements associated with the development. The components to construct the Green Energy Hub would predominantly be delivered to the site via rail removing around 43,566 HGV's from the road network.

### 5.2. LGV Vehicle Routing

A small amount of LGV traffic will require access to the site which comprises mainly of small material deliveries, support vehicles and workforce. Unlike HGV traffic, LGVs are not restricted to any weight limits on Fordstead Lane and will be able to access the site via Barnby Dun on the east as well as Arksey from the West.

### 5.3. AIL Vehicle Routing

A preliminary AIL study has been undertaken to identify potential constraints to the existing road network to ensure that suitable mitigation measures can be implemented to facilitate the delivery of AIL components to the Site. The largest item to be transported is the 400kV transformer, which, as per the Water Preferred Policy, is assumed to be

delivered to the nearest port to the development, Port of Goole. From Appendix B, two route options for the AIL deliveries from the Port of Goole to the development have been assessed, both of which avoid the route through the centre of Doncaster.

Route 1 follows the M62 westbound before heading south along the A19 to Bentley. From Bentley, the route will pass through Arksey and onto Fordstead Lane before entering the development at Thorpe Marsh. This is a proven AIL route that has been utilised in the past for the delivery of transformers to the National Grid Thorpe Marsh Substation and therefore is proposed to be the most appropriate AIL route.

Route 2 follows the M62 onto the M18 southbound before heading north along the A1(M) towards Bentley. From Bentley, the route follows Route 1 passing through Arksey onto Fordstead Lane before entering the development at Thorpe Marsh.

As part of the AIL study multiple structures on both routes have been identified that will require further investigation to establish their adequacy for AIL's. It should be noted that the shortest route to site via Fordstead Lane from the A630, is subject to the above described environmental weight limit restraint of 7.5Te as detailed in Section 4.1, and as such has not been considered as an AIL option.

Swept Path Analysis (SPA), as detailed in Appendix C, has identified that road modifications, specific traffic management and street furniture relocation will be required in order to facilitate the delivery of AIL's.

The Construction Traffic Management plan will prescribe all mitigation requirements such as trial runs, road modification details and exact AIL routes upon selection of the haulage contractor and equipment supplier. A draft document will be submitted to the Council for approval.

## 5.4. Construction Traffic Generated

The predicted number of construction traffic vehicle movements, both HGV and AIL, has been developed based on the proposed layout. Each vehicle travelling to the site will generate two 'vehicle movements'; one movement to the proposed development and one movement away from the proposed development i.e. 1 delivery to the site = 2 vehicle movements. Table 5.1 summarises the HGV movements by associated construction activities and their assumed method of transport (rail or road).

Construction traffic has been split into three distinct phases, construction traffic during the railhead construction period which is the most intensive period of HGV movements, anticipated to last 5 months. Once the railhead is operable there is a significant reduction in predicted HGV's for the remaining construction period which is anticipated to last around 31 months. The Operational phase of the development is estimated to last in perpetuity, however a 15 year period has been used below as an illustrative figure; the rail head will be maintained for the life of the asset and so HGV deliveries are anticipated to be low. Average deliveries for each of the phases are summarised in Table 5.1 below.

**Table 5.1: HGV Vehicle Movement Summary**

Activity Description	Duration	Average HGV Daily Deliveries	Average HGV Daily Movements (In and Out )
Railhead Construction Period	5 months	19	38
Remaining Construction Period	31 months	1-5	2-10

Activity Description	Duration	Average HGV Daily Deliveries	Average HGV Daily Movements (In and Out )
Operational Phase	In perpetuity, but 15 year period has been used as an illustrative figure	<1	<2

Source: Natural Power

## 5.5. Traffic Numbers

### 5.5.1. HGV Movements

It has been assessed that a total number of approximately 10,192 HGV movements will be generated as part of the development, predominantly in the first phase of work until the railhead is operable. To construct the railhead, an average of 19 HGV daily deliveries will be required for the first 5 months of the project. Upon Completion, the railhead will then be utilised for the delivery of the main project bulk items for the remainder of the construction period. This will result in HGV movements decreasing significantly between construction months 6-36, to a negligible level, other than for a short demobilisation period for approximately 3 months at the end of the project. During the construction period, HGV movements may increase to a peak of 5 daily deliveries (10 movements). The overall average deliveries over the entirety of the construction period is 4 (8 movements).

It should be noted, that if for any reason an increase in anticipated HGV movements is required over and above this peak figure when the railhead is in operation, permission will be sought in writing from the local planning authority.

### 5.5.2. LGV Movements

LGV movements, will be generated as part of the development. These movements will be generated by small item material deliveries, support vehicles and workforce travel. Park and ride arrangements maybe adopted and implemented within the Travel Plan which would be submitted under, and secured by, an appropriately worded planning condition prior to the construction phase. This travel plan would seek to minimise construction workforce vehicle movements through the surrounding road network.

## 6. Operational Vehicle Movements

Following completion of the construction phase, traffic levels will return to normal operating and routine maintenance levels which are deemed to be negligible.

### 6.1. Construction Traffic Management Plan

The assessment has been based on a number of conservative assumptions that can only be clarified post consent and once a civil contractor is engaged. Hence, it is expected a Planning Condition will be applied to the Development for a final CTMP and a Travel Plan to be prepared and approved by Doncaster Council post consent and prior to construction works commencing. A draft Construction Traffic Management Plan will be provided for consideration as supplementary information prior to determination of the planning application.

The final CTMP shall be developed in consultation with the local authorities, with the traffic management measures agreed and implemented prior to construction commencing. A system of communication shall be agreed with the above parties for enabling proactive consultation to take place throughout the construction phase. This is expected to include community meetings, direct notification (i.e. letter drops, face to face, SMS, etc) to affected parties prior to construction beginning. Signage on the road advising of dates for particular construction events affecting the road



network (i.e. AIL deliveries, concrete pours, etc) will be deployed well in advance of the scheduled construction dates.

Thereafter, the Principal Contractor shall appoint a nominated person to whom all traffic management and road safety issues shall be referred.

## 6.2. Construction Traffic Timings

Timing of construction traffic will be scheduled to avoid peak times if possible, in particular through areas of schools and public amenities or during public events. For example, transportation will be scheduled to avoid Bentley, Arksey and Barnby Dun during periods of school opening and closing to avoid congestion and safety issues in the town.

The hours of construction are anticipated to be as follows:

Monday to Friday	0700 – 1900
Saturday	0900 – 1600
Sunday	No construction work.

If unexpected works is required on Sunday, a request will be submitted in writing to the appropriate Planning Authority.

The Principal Contractor shall specifically detail within the CTMP how HGV and AIL traffic will be controlled to avoid peak times.

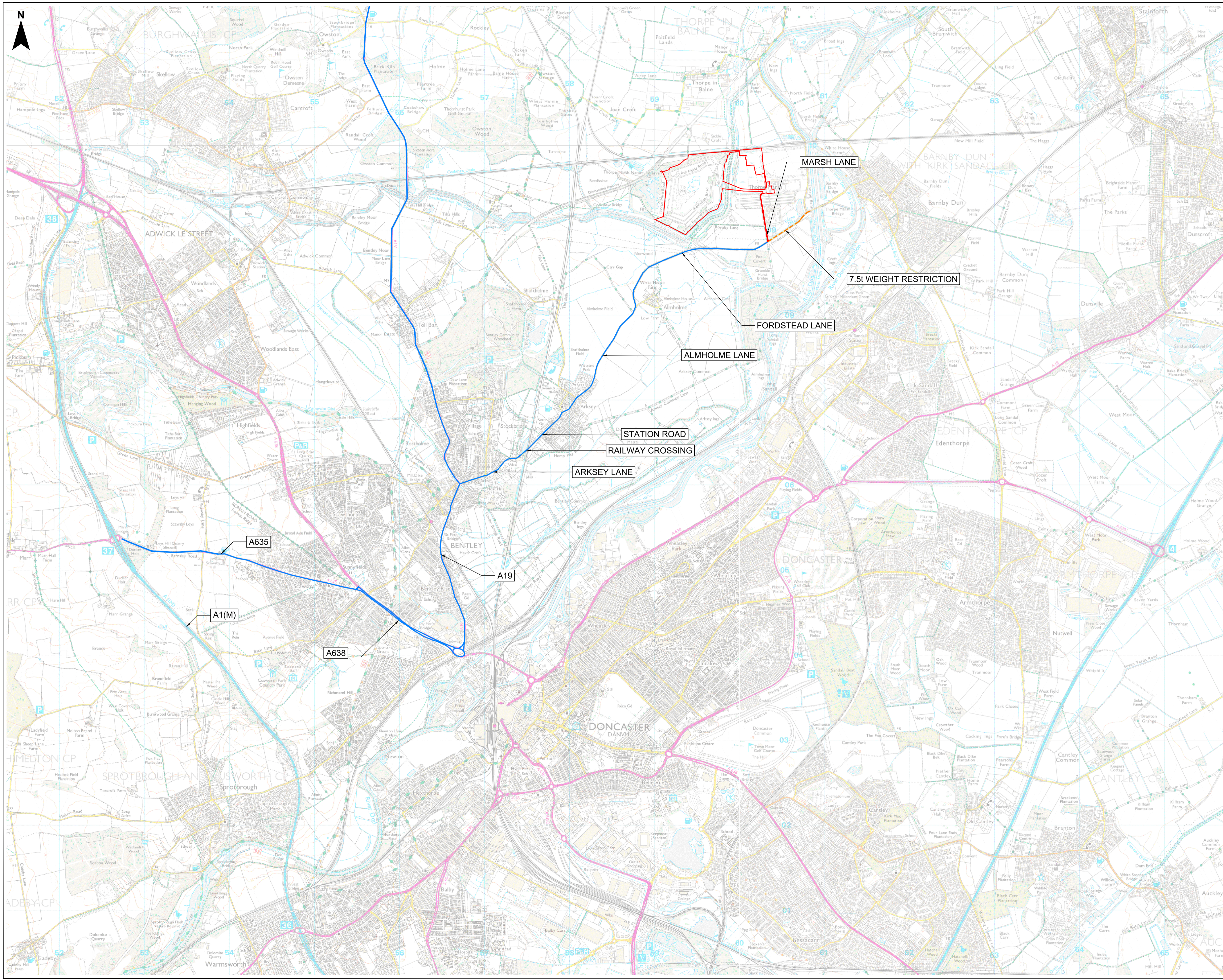
## 7. Cumulative Traffic Assessment

A separate planning application (19/03034/FULM) for a site located to the south of Fordstead Lane is currently in the planning process. The original proposal comprises the removal of burgy material by HGV with an estimated 80 movements per day (40 in /40 out) with all access via the southern section of Marsh Lane and its junction with Fordstead Lane. However, it is now understood that the applicant has accepted the recommendation of Doncaster Council transportation to reduce the daily operations to minimise the impacts of HGV traffic on the local highway. As such, it is understood that the daily HGV numbers have been reduced to 40 movements / 20 deliveries.

As previously mentioned in Section 5.4 and summarised in Table 5.1, a total of 19 HGV deliveries / 38 Movements are concluded to be the highest average over the construction and operational phases of the Thorpe Marsh Green Energy Hub development. Therefore, potential cumulative movements during the initial rail construction period are estimated to be 39 deliveries / 78 movements. As the design and planning of the site progresses, the 19 HGV daily deliveries will be reviewed with recommendations and mitigations implemented within the Construction Traffic Management Plan.

## **Appendices**

- A. Access Route
- B. AIL Route Layout Plan Drawing
- C. Swept Path Drawing



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NOTES:  
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- KEY:
- HGV ROUTE TO STRATEGIC ROAD NETWORK
  - SITE BOUNDARY
  - FORDSTEAD LANE WITH WEIGHT RESTRICTION

A	INITIAL DRAFT	MH/RC/CG	01/03/23
REV	DESCRIPTION	BY/CH/APP	DATE

CLIENT: BANKS RENEWABLES

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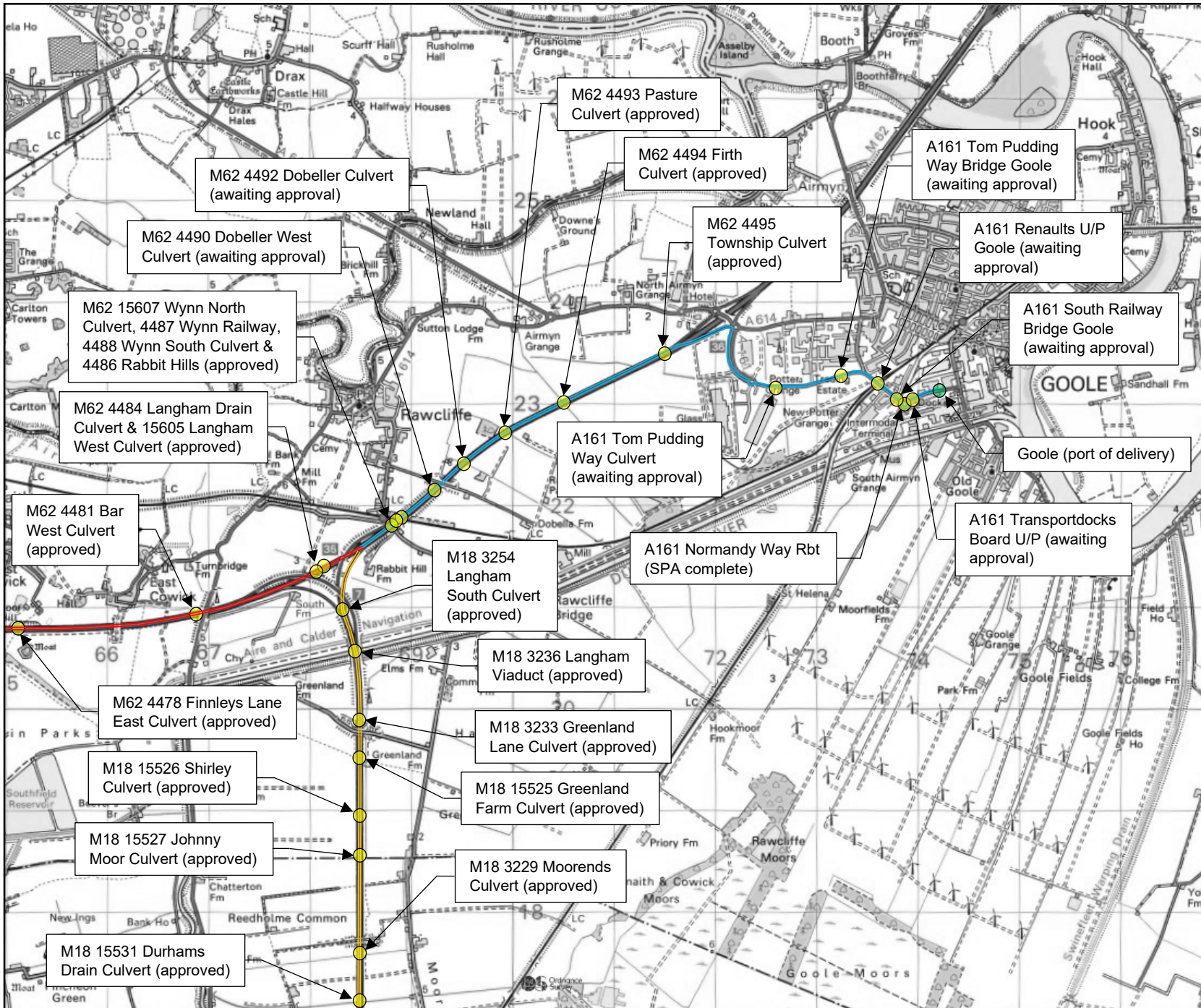
IFS DOC NO.:	1310492	IFS ACTIVITY:	30910
SCALE:	NTS	SHEET NO.:	1 OF 1

STATUS: **FOR INFORMATION**

PROJECT: THORPE MARSH GREEN ENERGY HUB

DRAWING TITLE: ACCESS ROUTE


DRAWING NO.:	15508_DET_3024	REVISION	<b>A</b>
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Key	
	Common Route
	Route 1
	Route 2
	Collection point
	Point of interest
	Delivery point

0	30/11/22	First issue
Rev.	Date	Amendments

Revisions



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Client **Natural Power**

Project **Thorpe Marsh Energy Park**

Title **250 to 400 kV Transformer  
Goole to Thorpe Marsh**

Project no. **A220680**

Sheet **1 of 7** Rev. **0**

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