

REPORT

Proposed AD Plant, Bressingham

Transport Statement
Part 1 of 2

Client: Storengy UK

Reference: PC4115-RHD-ZZ-XX-RP-Z-0002

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1 Introduction

1.1 Overview

This Transport Statement has been prepared by Royal HaskoningDHV, on behalf of Storengy UK. It relates to a planning application for a proposed Anaerobic Digestion (AD) Plant at Bressingham (submitted 17 January 2023).

A previous planning application for a similar AD plant on the Application Site was submitted to South Norfolk Council (SNC) (ref: 2022/1108). This application was refused on the 14 December 2022.

Comments on the previous application were received from Norfolk County Council (NCC) as local highway authority. On receipt of comments on the previous application, the applicant has instructed Royal HaskoningDHV to produce this Transport Statement which takes account of those comments received.

This Transport Statement has therefore been prepared to set out the relevant highways and transport matters in relation to the proposed AD plant.

The application seeking full planning consent has been submitted to SNC for:

“Construction of an Anaerobic Digestion facility (part retrospective), comprising: 1 no. digester tank and 1 no. secondary digester/digestate storage tank, silage clamps, liquid and dry feed system; digestate separation, handling and pasteurization, biogas upgrading and mains gas-grid connection; carbon capture, CHP, agricultural building; office buildings, weighbridge, up to 2 no. covered digestate storage lagoons, and associated works and infrastructure, plant, vehicular accesses, roads and landscaping (including earth bunds). [Revised application following refusal of planning application 2022/1108, to include revised digester roof design and lagoon options]”. Deal Farm Kenninghall Road Bressingham Norfolk IP22 2HG”

This application proposes two liquid digestate storage lagoon options:

Option 1: which proposes two lagoons; a northern AND southern lagoon, each of 5,000m³ capacity (as shown on drawing 27402/154 Rev B); OR

Option 2: which proposes a single, enlarged southern lagoon, of 10,000m³ capacity (as shown on plans 27402 154 Rev C).

Another prior planning permission (ref. 2015/0595) consented an AD Plant at the site. This current application seeks consent for an AD plant with no more than 23,950t per annum feedstock throughput. To provide a robust and unambiguous evaluation of the potential impact of the proposed AD plant, this TS has been prepared on the presumption of a worst-case baseline position i.e., no extant AD plant consent on the site.

1.2 Highways Comments Received

NCC as the local Highway Authority was consulted as part of the statutory consultation for the prior application. Their letter dated 25 August 2022 set out a number of concerns with regards to the proposals detailed in the previously submitted TS and resulted in two Reasons for Refusal being identified:

SHCR 07 – The highway network serving the site is considered to be inadequate to serve the development proposed.

SHCR 31 – The application is not supported by sufficient transport information to demonstrate that the proposed development will not be prejudicial to the satisfactory functioning of the highway / highway safety.

The detailed response provided by the Highway Authority identifies principal concerns being, in summary:

- The feedstock throughput would be exceeded given the available capacity on the site which would lead to further traffic to / from the site;
- With regards to the catchment area, there is no mechanism to ensure the locality of the feedstock;
- There is a lack of information or evidence to inform the proposed traffic generation in the TS;
- The level of comprehensiveness of the assessment of the route carried out with regards to highway mitigation is under question.

This report addresses key objections and concerns raised by NCC which are provided at **Appendix A**. In so doing it attempts to establish clarity on the foreseeable trip making associated with the proposal, and how certainty can be provided on the means by which impact on local roads can be delimited.

In this TS, the following terms are used:

- Vehicle movement – a single direction vehicle trip i.e., a single arrival or a single departure of a vehicle
- Two-way trip – the combination of two directional vehicle movements made by one vehicle i.e., the combination of an arrival and a departure of a vehicle.

1.3 Scope

Following this introductory section, this report is arranged as follows:

- **Section 2** provides a review of the existing conditions pertinent to the Application Site including details of the site location, a description of the surrounding highway network; and road safety information.
- **Section 3** provides full details of the development proposals providing clarity on the net change in traffic flows anticipated as a result of the scheme
- **Section 4** provides an evaluation of the proposed traffic routing, including proposed off-site highways improvements to address concerns regarding safety and routing of vehicles to and from the site.
- **Section 5** sets out responses to queries and concerns raised over the course of the previous application; and
- **Section 6** summarises and concludes this TS.

2 Baseline Conditions

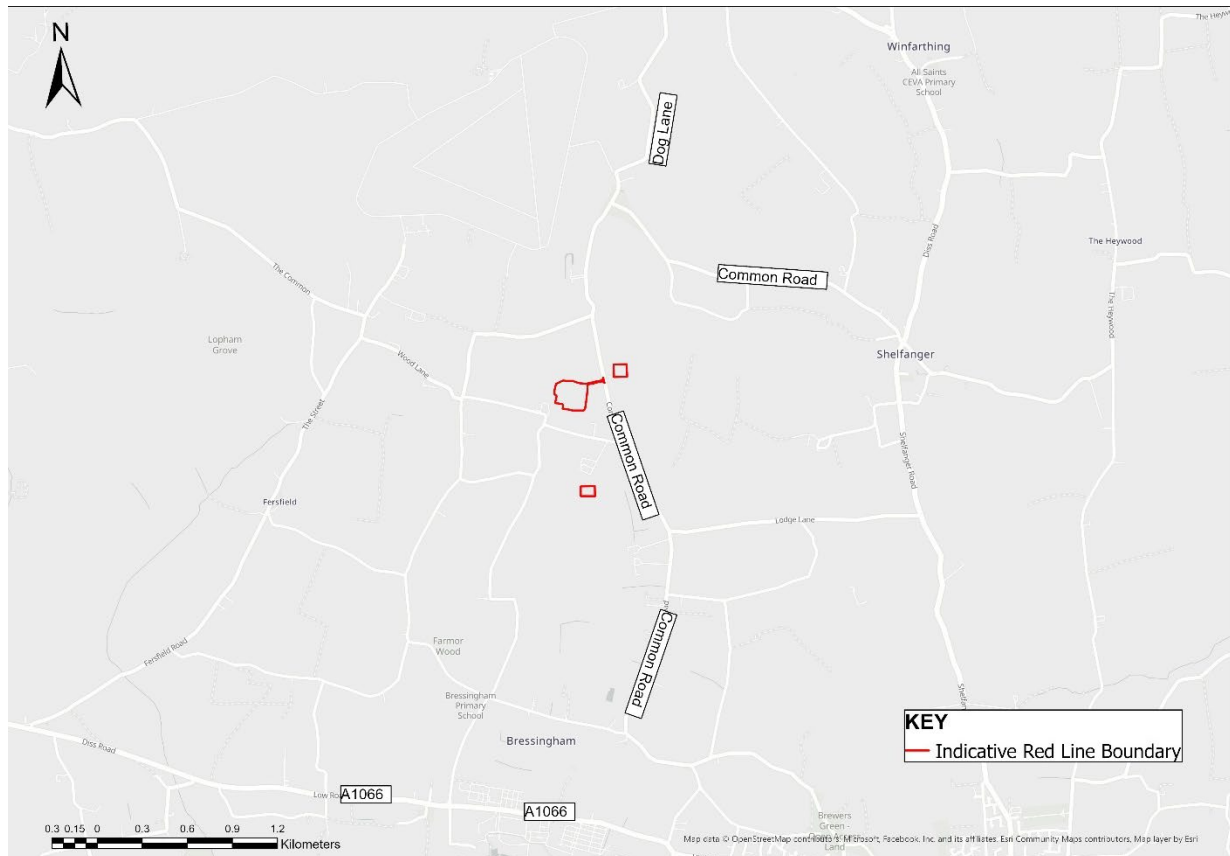
2.1 Introduction

This section of the TS provides an overview of the baseline conditions associated with the existing conditions associated with the Application Site.

2.2 Site Location and Description

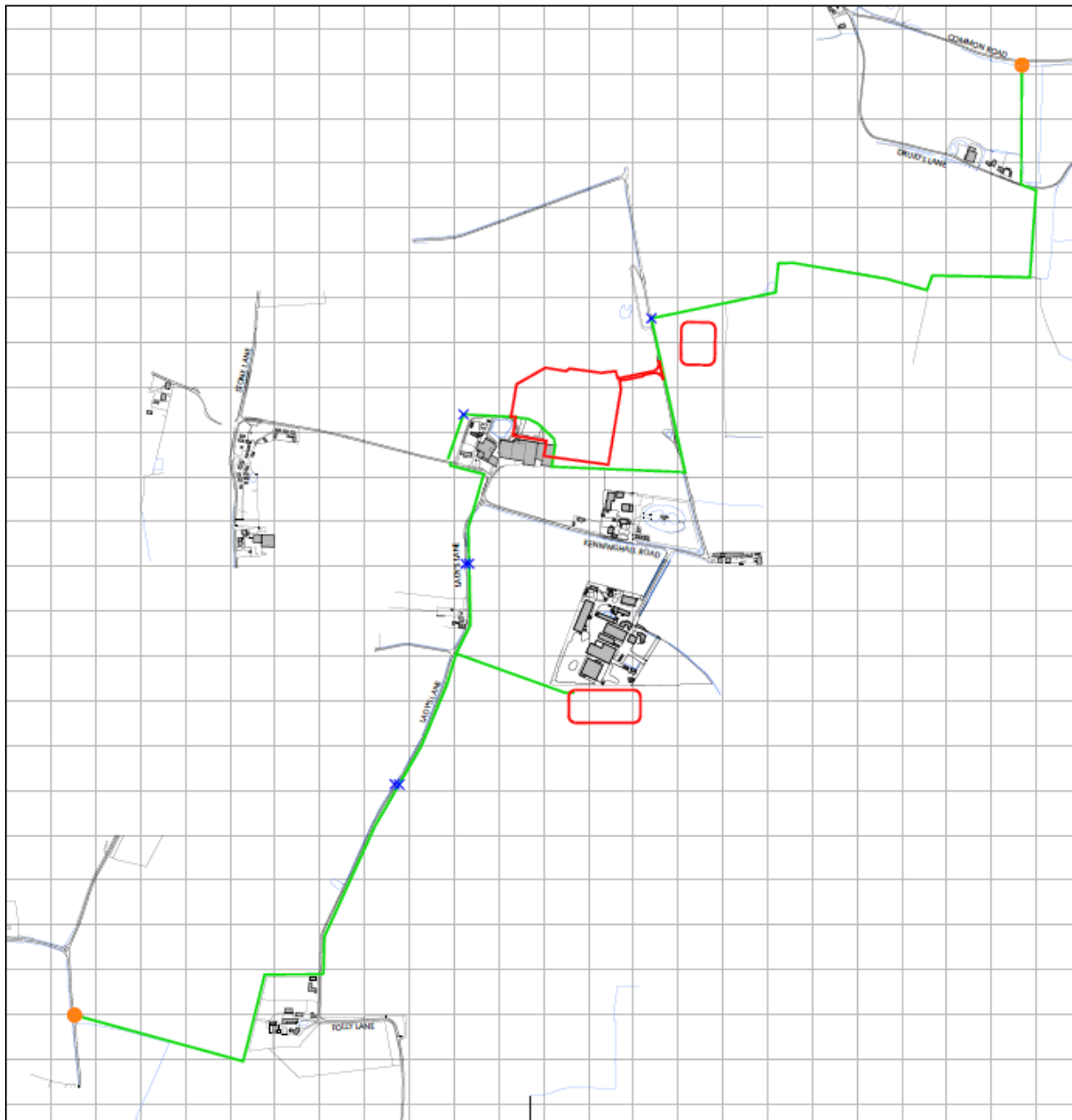
The Application Site is located approximately 2km to the north of Bressingham Common and approximately 4km to the northwest of Diss, in South Norfolk. The Application Site is indicated in **Figure 2.1**.

Figure 2.1 Indicative Site Location



The majority of the Application Site (owned by Des Aves) is located within an operational livestock and arable farm known as Deal Farm. The red line boundary as indicated in **Figure 2.2** relates to the creation of up to two new digestate lagoons. In addition, the proposal would provide digestate offtake points within fields remote from the site. Further details on the component parts of the proposal and their operation are set out in **Section 2.4**.

Figure 2.2 Application Red Line Boundary Showing potential Lagoon Locations and Digestate Pipeline Routes



In the vicinity of the Application Site, Deal Farm comprises a large pig fattening unit, straw storage, maize/grass/whole-crop cereal field clamps, muck pads and beet pads. The Application Site adjoins the existing farmyard (the area shown in **Figure 2.1**) and handles some 13,253 tonnes (t) of feedstocks and up to 7,600t of manures associated with the wider farm's operations.

In a wider context, the Application Site is surrounded by the wider working farm operated by RG Aves which includes:

- The Oaks (to the south of Kenninghall Road) – comprising a farmhouse, a second dwelling, a large chicken unit, a small beef-cattle rearing unit, grain and straw stores and various farm buildings;

- 335 hectares of arable land (owned by the farm);
- 101 hectares of arable land (third party land, which is farmed and cropped by RG Aves); and
- Straw contracting.

Figure 2.3 illustrates the Application Site in Deal Farm's existing operational context.

Figure 2.3 Existing Agricultural Operations Associated with the Application Site



2.3 Local Highway Network

As is to be expected given the rural nature of the site, the roads in its vicinity are rural in nature and typically characterised by narrow carriageways which are unlit and subject to the national speed limit.

The road north of the Application Site, Common Road, is a Quiet Lane and forms a priority junction with Dog Lane approximately 1 kilometre (km) north of the existing site. For the majority of their length, Common Road and Dog Lane are two-way single lane narrow carriageways, subject to the national speed limit and they include passing places at various points. Common Road and Dog Lane provide direct access to private dwellings and open fields.

Dog Lane, which extends for 2km, forms a priority junction with B1077 Short Green where the speed limit changes to 50mph. Vehicles traveling along Dog Lane are subject to a 7.5tn weight restriction. The section of the highway network between the existing site access and the B1077 Short Green/ Dog Lane priority junction are unlit with no footways provided.

Bearing south of the site, the section of Common Road south of the existing site access, is characterised by a two-way single lane carriageway which primarily provides direct access to residential dwellings via crossover accesses in Bressingham Common. Through Bressingham Common, Common Road is subject to a 30mph speed limit with footway provision for approximately 500 metres (m) of its length.

At approximately 2.5km south of the existing site access, Common Road forms a priority T-junction with Bressingham Road and High Road. Bressingham Road, which extends for 500m between Bressingham Road/ High Road/ Common Road priority junction and Bressingham Road/ Snow Street/ Baynard's Lane priority junction, is mainly subject to 40mph speed limit which reverts to 30mph on approach to the Snow Street settlement. A parking layby is provided along the Bressingham Road where the carriageway provides direct access to residential dwellings.

Baynard's Lane and Hall Lane in the vicinity of The Swan Pre-School, are subject to 30mph speed limits. Both Baynard's Lane and Hall Lane have restricted visibility along their route due to its narrow lanes and the presence of high vegetation. Hall Lane connects to A1066 High Road via a priority junction approximately 4km south of the Application Site.

Bearing southwest of the site, Kenninghall Road, a narrow two-way single lane carriageway, connects Common Road to Lady's Lane and Wood Lane in Boyland Common. Located between Kenninghall Road and A1066 High Road are, Lady's Lane and Folly Lane which have a combined length of approximately 3km. Although narrow in nature, visibility for vehicles travelling along Lady's Lane and Folly Lane is unimpeded due to the open grasslands present on both sides of the carriageways for majority of their routes.

Further southwest of the site, connection to the A1066 High Road from the Application Site can be gained via Nordle Corner, Fersfield Road, The Valley and Halford Lane. Although all narrow two-way single lanes bordered by open fields, a 300m section of Fersfield Road serving residential dwellings, is characterised by tall vegetation on both sides of the carriageway.

The A1066 to the south of Bressingham, is a principal route. While the junctions formed with the A1066 and Hall Lane and School Road respectively are constrained geometrically, the junction formed with Halford Lane is of a more generous design. Weight limits of 7.5t are in place at all three junctions "Except for loading".

2.4 Current Operations within the Existing Application Site

The proposed AD plant will require feedstocks as set out in further detail in **Section 3.4**. In summary, these feedstocks comprise:

- Maize (3,500 tonnes per annum);
- Grass (5,000 tonnes per annum);
- Straw (6,450 tonnes per annum);
- Chicken manure (500 tonnes per annum);
- Pig manure (5,500 tonnes per annum); and
- Cattle / duck manure brought in (3,000 tonnes per annum).

The majority of these feedstocks are handled at the Application Site at present. **Table 2.1** provides a summary of the existing agricultural materials currently imported to or exported from the Application Site in relation to the proposed AD plant feedstocks. All other farm operations would continue as at present with the AD plant in place, and therefore no consideration has been made of the potential consequential effect of the AD plant on the farm's operations for example, any potential reduction in sugar beet yield as a result of increased grass yield, as this does not directly pertain to the AD plant proposal.

Table 2.1: Summary of Materials currently handled in the Existing Application Site

Material	Tonnage Handled by Existing Application Site	Notes
Feedstocks		
Maize	3,500t	The farm currently grows approximately 7,000t per annum (p.a) of maize in field clamps on the land at Deal Farm of which 3,500t p.a. would be fed into the proposed AD plant.
Grass	2,250t	The farm currently grows 2,250t p.a. of grass which is grown and stored at Deal Farm.
Straw	4,520t	The farm currently grows 800t p.a. of straw which is used for livestock. An additional 3,720t p.a. of straw is imported from other farms and are later sold to other farms.
Manures		
Chicken manure	500t	The farm currently produces approximately 500t p.a. of chicken manure which is currently transported from the respective chicken shed and stored on muck pads before later being spread to fields.
Pig manure	5,500 – 6,500t	The farm currently produces approximately 5,500t – 6,500t p.a. of pig manure which is stored on muck pads and later spread to fields.
Cattle / duck manure	600t	The farm currently imports 600t p.a. of cattle / duck manure from surrounding livestock farms which is stored on muck pads and later spread to fields.
Total tonnages of proposed feedstock currently handled	16,870t	

Table 2.1 identifies that with regards to the required feedstock of the proposed AD plant, the Application Site currently handles some 10,270t of plant crops and 6,600 tonnes of manures annually.

2.4.1 Existing Traffic Movements Associated with Plant Crops

Based on the applicable materials, tonnage and usage of materials detailed in **Table 2.1**, the following

Table 2.2 and **Table 2.3** provide an analysis of the current annual traffic movements associated with the feedstock materials on the Application Site.

Table 2.2: Existing Annual Traffic Movements Associated with Bought in Straw

Parameter	Notes	Straw (import)	Straw (export)	Total
Straw brought in from other farms to store		3,720t	3,720t	
Average load size (t)		16t	21t	
No. of vehicles arriving		233	177	410
Grand Total Movements				
Total no of vehicles arriving	No of additional vehicles associated with the handling of straw	233	177	410
Total Two-Way Vehicle Movements (arrivals + departures)	No of two-way vehicle movements	466	354	820

Table 2.3: Existing Onsite Annual Traffic Movements associated with Plant Crops

Material	Notes	Maize	Grass	Straw	Total
Hectarage (ha)	Approximate area of each crop grown as an average over the past 4-5 years	78ha	50ha	100ha	
Plant Crops					
Average crop yield (t/ha)	Five-year average	45t/ha	45t/ha	8t/ha	
Total crop yield (t)	Based on average crop yield and hectarage	3,500t	2,250t	800t	
Transport in to farm store					
Average load size to farm store (t)	Based on historic vehicle capacity	12t	12t	7t	591
Number of vehicles arriving	Based on total crop yield and average load size to farm store	292	188	111	
Transport out of farm store					
Average load size out of farm store (t)	Based on historic vehicle capacity	26t	16t	0t	234
Number of vehicles arriving for crop harvest and export	Based on total crop yield and average load size to farm store. A 15% reduction to account for clamp loss.	114	120	0	
Artificial Fertiliser					
Nitrogen use (Kg N/ha)		150Kg K/ha	150Kg K/ha	0Kg K/ha	
Nitrogen concentration (%)		35%	35%	0%	
Total nitrogen fertiliser brought in (t)	Based on nitrogen use, concentration and hectarage	65t	22t	0t	
Average load size (t)		28t	28t	28t	
No of vehicles arriving (bringing in fertiliser)	Based on total nitrogen fertiliser brought in and average load size	1	1	0	
No of vehicles arriving (to pick up fertiliser)		3	3	0	
Total no of vehicles arriving for fertiliser	Total no of vehicles associated with bringing in and applying fertiliser	4	4	0	8
Potash use (Kg K/ha)		230Kg K/ha	250Kg K/ha	0Kg K/ha	
Potash Concentration (%)		60%	60%	0%	
Total Potash fertiliser brought in (t)	Based on potash use, concentration and hectarage	58t	21t	0t	
Average load size (t)		26t	26t	26t	
No of vehicles arriving (bringing IN fertiliser)	Based on total potash fertiliser brought in and average load size	1	1	0	
No of vehicles arriving (to pick up fertiliser)		3	3	0	
Total no of vehicles arriving for fertiliser	Total no of vehicles associated with bringing in and applying fertiliser	4	4	0	8
Crop Protection					
Total no of vehicles arriving associated with bringing in spray passes per season		4	3	0	7
Grand Total Movements					
Total no of vehicles arriving	No of vehicles associated with the transport of plant crops, artificial fertiliser and crop protection.	418	319	111	848
Total Two-Way Vehicle Movements (arrivals + departures)	No of two-way vehicle movements	836	638	222	1,696

From **Table 2.2** and **Table 2.3**, it is evidenced that a total of 2,516 two-way annual vehicle movements are currently associated with plant crops.

2.4.2 Existing Traffic Movements Associated with Manures

Based on the materials and tonnage detailed in **Table 2.1**, **Table 2.4** provides a breakdown of the annual traffic movements associated with the movement of manures at the existing site.

Table 2.4: Existing Onsite Annual Traffic Movements associated with Manures

Parameter	Notes	Own Poultry Litter	Dry Pig Muck	Wet Pig Muck	Bought in Muck	Total
Annual tonnage		500t	3,600t	2,900t	600t	
Average load size (t)		13t	6t	16t	26t	
No of vehicles arriving	No of vehicles associated with the transport from shed to Muck pad	39	600	181	23	843
Tonnage to be spread	Manure moved from muck pad to field to be spread (25% spread direct from pad)	375t	2,700t	2,175t	450t	
Average load size (t)		13t	10t	16t	16t	
No of vehicles arriving	No of vehicles associated with the transport from the muck pad to field	29	270	136	28	463
Grand Total Movements						
Total no of vehicles arriving	No of vehicles associated with the handling of manure	68	870	317	51	1,306
Total Two-Way Vehicle Movements (arrivals + departures)	No of two-way vehicle movements	136	1,740	634	102	2,612

From **Table 2.4**, it is demonstrated that a total of 2,612 two-way annual vehicle movements is currently associated with manures at the Application Site.

2.4.3 Total Existing Traffic Movements

Table 2.5 provides a summary of the total two-way traffic movements associated with the Application Site in its current form. These are two-way traffic movements i.e., arrivals and departures combined.

Table 2.5: Total Two-Way Existing Annual Traffic Movements

Parameter	Traffic Movements
Onsite plant crop movements	2,516
Movement of manure	2,612
Total Two-Way traffic movements	5,128

Based on **Table 2.5**, the current materials and operations on the existing Site (i.e., current agricultural movements without an AD Plant) is associated with some 5,128 two-way traffic movements per annum.

2.5 Road Safety

In order to establish whether there are any inherent safety issues in the vicinity of the Application Site, a review of Personal Injury Collision (PIC) data from CrashMap¹ for the most recent five-year period available (2017-2021) was undertaken. The review considered the local highway network described in **Section 2.2** and identified that there were 17 recorded collisions within the five-year period.

Of the 17 collisions recorded, seven resulted in slight injuries, nine in serious injuries and one resulted in a fatal injury. Of the seven serious injuries, one collision in 2019 involved a goods vehicle and one collision in 2017 involved a vulnerable road user. The fatal collision occurred in 2020 at Bates Lane's junction with The Common and involved a vehicle colliding with street furniture. There was no collision recorded on Kenninghall Road and Common Road within the study period. A CrashMap Pro report providing further details on the collisions is provided in **Appendix B**.

A review of the PICs on the local highway network indicates that there is no clustering of incidents nor a pattern relating to vulnerable road users or goods vehicles. On this basis, it is considered that there are no existing safety trends which could potentially be worsened by the proposed development. However, the future road safety implications of the proposal have been considered, as detailed in **Section 4**.

¹ CrashMap website: <https://www.crashmap.co.uk>

3.1 Introduction

The proposed development would involve the construction of an AD plant as detailed below:

The layout of the proposed development is provided in **Figure 3.1** and a scaled drawing is provided in **Appendix C**.

[illegible]

- Option 1 (North and South Lagoon); and
- Option 2 (Extended South Lagoon).

Both Option 1 and Option 2 present the same material traffic and transport implications, and therefore the export of digestate is considered in the assessment of the proposed AD plant in this TS.

In addition, liquid digestate would be exported from the site to various offtake points. There are two types of offtake points proposed: field offtake which comprises connection points for farm machinery which would spread digestate to fields adjacent the offtake point; and tanker offtake point which comprise connection points for agricultural vehicles which would spread digestate to fields further removed from the offtake point. Both types of offtake points will be fed from the AD plant by pipeline. The digestate from field offtake points would be spread by umbilical feed and would therefore have no vehicular trips associated with its export. The tanker offtake points would have only the movements associated with tankers used for field spreading.

Since the 2015 application, the Reduction and Prevention of Agricultural Diffuse Pollution (England) Regulations 2018 (“Farming Rules for Water”) has come into being. Agriculture/ farming is the main source of diffuse pollution in the UK with chemical fertilisers, and livestock manure and slurry storage being the two main causes of this pollution. These Regulations are the main reason for the amendment to the current application (compared with the previous) to allow for a manure storage building and additional lagoon storage to accommodate more digestate storage capacity for longer durations to allow for the now much shorter “spreading windows”.

From storage on site, the solid fraction would be exported to be spread on nearby fields as a biofertilizer, instead of using chemical fertilisers as at present. Some 50% of the liquid fraction would be exported by pipeline via the offtake points with the remainder exported by vehicle. Details relating to the vehicular movements associated with the proposed AD plant are provided in **Section 3.5**.

3.2 Renewable Energy

Since the introduction of the UK Government’s Renewable Energy Strategy (2009) there has been a surge of interest in AD as a source of renewable energy from Government, industry and farmers as the UK has recognised the benefits of this process. The recently published Biomass Policy Statement (November 2021; Department for Business, Energy and Industrial Strategy) reinforces the role identified for biomass in the short to long term, as part of the Government’s policy to accelerate the decarbonization of the UK economy across all sectors.

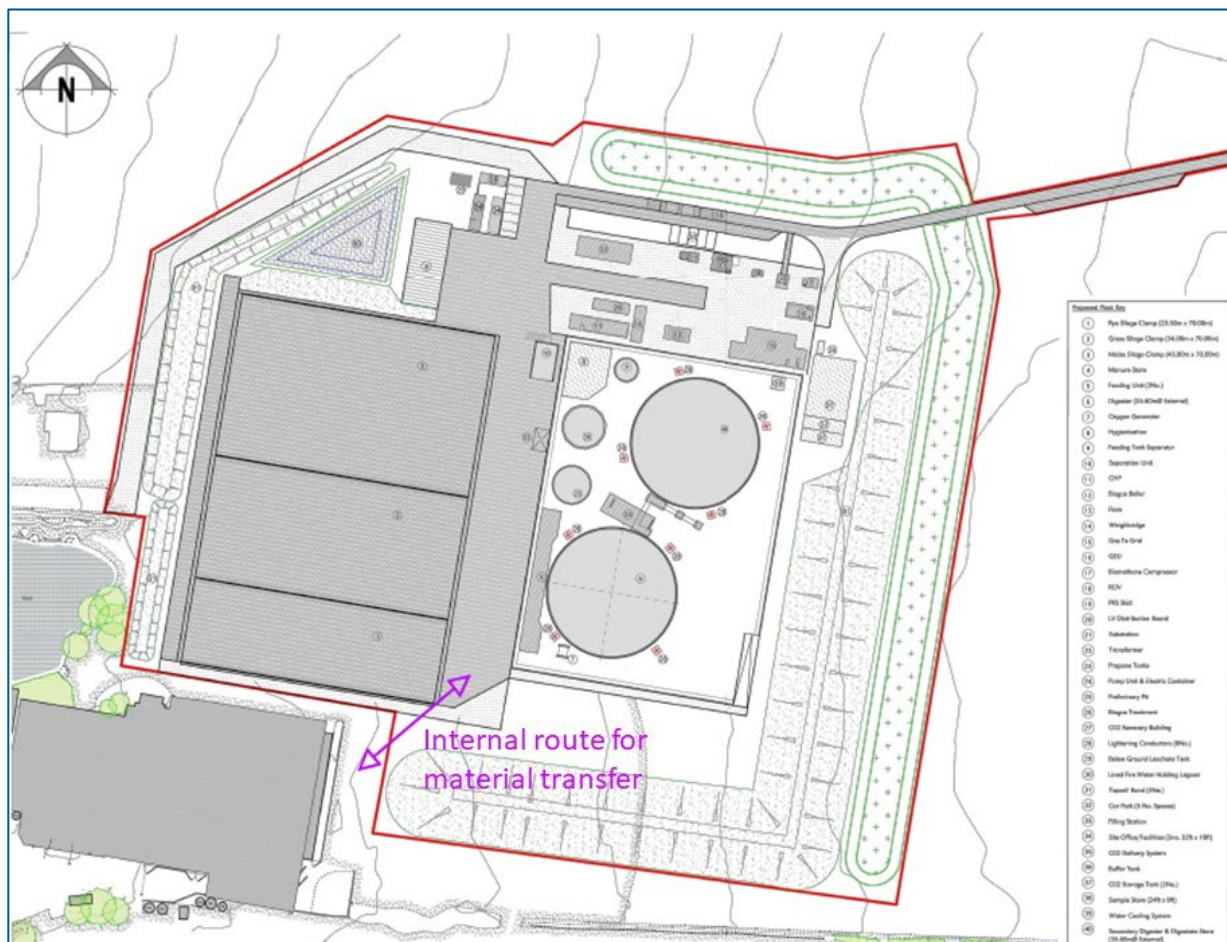
In addition to renewable, sustainable energy, AD plants also produce other important products such as green carbon dioxide (CO₂) for commercial or industrial uses, and organic digestate (a bio-fertiliser replacing conventional fossil fuel derived chemical fertilisers). The digestate from AD plants can be used to replace inorganic fertilisers, creating a closed loop nutrient cycle back to land. The use of digestate in turn reduces the risk of leaching and run off and so can prevent diffuse water pollution. By replacing inorganic mineral fertiliser, the production of which requires significant energy input, AD is also able to provide benefits in terms of reducing greenhouse gas emissions through the sequestration of atmospheric carbon (in plant matter) and additional carbon capture that already occurs when the organic matter within the digestate is applied to and held in the soils.

The use of AD is therefore helping the UK address several major challenges, principally climate change and energy security. These challenges have been compounded by the war in Ukraine which continues to further disrupt fossil fuel supplies and the overall energy market. The world is in the grip of a major energy crisis, with countries worldwide affected by very high and volatile prices, particularly of fossil fuels. As the report by the United Nations Global Crisis Response Group on Food Energy and Finance (August 2022) notes: “The crisis has emphasized the need for energy resilience and a push for renewable energy sources.” The proposed AD plant would provide a vital contribution to addressing all of these challenges.

3.3 Vehicular Access Arrangements

The proposed development would use an access on Common Road to access the adopted highway. In addition, an internal route would be provided to enable the transfer of material from the Deal Farm farmyard to the AD plant, as indicated in **Figure 3.2**.

Figure 3.2 Internal Route for Material Transfer



Details of the vehicles anticipated to serve the site are provided at **Section 3.7.1**. Given the outcome of the swept path analysis, in combination with the vehicle composition, the proposed vehicular access is considered to be appropriate.

3.4 AD Process and Required Feedstocks

The energy generated by any AD plant is determined by the bacterial process, residence time (the duration that feedstock is retained in the digester), and feedstocks used. This process can be designed in different ways depending on the types, quantities and availability of different feedstocks available in the locality of any given AD plant site. The quantum of feedstocks throughput on an AD plant is therefore principally a function of the design process and not of the design of the physical AD plant infrastructure. As such, forecast feedstocks can be estimated and total throughput defined.

The proposed AD process for the Application Site would require the following plant energy crop and manure feedstocks:

- Maize (3,500 tonnes per annum);

- Grass (5,000 tonnes per annum);
- Straw (6,450 tonnes per annum);
- Chicken manure (500 tonnes per annum);
- Pig manure (5,500 tonnes per annum); and
- Cattle / duck manure brought in (3,000 tonnes per annum).
- Total 23,950t feedstock comprising 14,950t plant crops/ crop by-products: and 9,000t manures

Of these feedstocks, only part of the straw and brought in muck (cattle and duck manure) feedstock would be obtained from third party farms that RG Aves already trades with. All other feedstocks would be sourced from either Deal Farm or the RG Aves land holdings. The current quantum of pig manure handled will continue at the farm with the AD plant in place. As only 5,500t of pig manure is required as a feedstock, the remaining up to 1,000t pig manure will continue to be spread to fields via muck pads as at present. An internal route would be provided between the Deal Farm Pig Unit and the AD plant as indicated in **Figure 3.2**.

Reflecting the future provision of feedstock by third party farms a, Memorandum of Understanding has been agreed with Des Aves as set out in **Appendix D**.

As well as the quantum of feedstocks fed into the AD plant, the design process in combination with relevant regulatory obligations and guidance (such as the rules on storing silage, manures or digestate, and guidance on conditions for spreading soil conditioners or fertilisers), requires a defined approach to the storage of feedstocks and digestate and the subsequent timings of export for both liquid and solid digestate fractions. The AD process at the proposed site would generate a sustainable form of gas which would be piped to the National Grid via a local connection. It will also result in the following materials for export:

- Solid digestate (10,339 tonnes per annum);
- Liquid digestate (10,309 tonnes per annum); and
- CO₂ gas (4,835 tonnes per annum).

As well as generating sustainable gas, heat and power, the by-product of the AD process, digestate, is an excellent biofertilizer. The use of digestate as a soil improver reduces reliance on and usage of chemical fertilizers which are themselves typically reliant on fossil fuels. CO₂ is a high demand commodity, being required in a wide range of food manufacturing processes and in wider industrial uses. Indeed, the recent high gas prices caused two of the UK's largest fertiliser production plants to close leading to both a nationwide fertiliser and CO₂ shortage. The Deal Farm AD plant would create a local source of bio-fertiliser and CO₂ while simultaneously reducing the UK's reliance on overseas gas.

The proposals would also export sustainable gas by injection to the grid via a pipeline link to the local gas connection. In order to achieve this, propane is used for biomethane enrichment prior to injection to the grid as biomethane has a lower calorific value than the natural gas in the gas main. This would require:

- Propane (572 tonnes per annum)

In identifying the diverse transport movements associated with the proposed AD plant, these operational matters have been taken into account and considered in the context of the existing operations within the Application Site.

3.5 Proposed Operations within the Application Site

The introduction of the AD plant would result in changes to the quantum and/or handling of materials currently imported to or exported from the Application Site. These changes are summarised below in **Table 3.1**.

Table 3.1: Summary of Materials to be Reallocated from the Existing Farm Operations as a Result of the Proposed AD Plant

Material	Tonnage currently handled in Application Site	Proposed AD plant feedstocks (t)	Notes
Plant Crops			
Maize	3,500t	3,500t	The farm currently grows approximately 7,000t p.a. of maize in field clamps on the land at Deal Farm. Approximately 3,500 p.a. of maize would be required to feed into the AD plant. The remaining 3,253 p.a. of maize may continue to be clamped and exported as per the existing operation.
Grass	2,250t	5,000t	The farm currently grows 2,250t p.a. of grass which is grown and stored at Deal Farm. Approximately 5,000t p.a. of grass would be required to be grown and fed into the AD plant.
Straw	4,520t	6,450t	The farm currently produces 800t p.a. of straw from its cereals farming. An additional 3,720t p.a. of straw is imported from other farms and are later sold to other farms. In future, approximately 6,450t p.a. of straw would be fed into the AD plant. This would eliminate the sale of straw.
Manures			
Chicken Manure	500t	500t	The Oaks farm currently produces approximately 500t p.a. of chicken manure which is currently stored in muck pads and later moved to the fields. With the introduction of the AD plant, the 500t p.a. would be fed into the AD plant.
Pig Manure	5,500t – 6,500t	5,500t	The farm currently produces up to 6,500t p.a. of pig manure (depending on the success of the operation) which is currently stored on muck pads and field heaps before being moved to the fields. With the introduction of the AD plant, the 5,500t p.a. would be fed directly into the AD plant via internal movements and the remaining pig manure (assumed to be up to 1,000t p.a.) would continue to be spread on fields as existing situation.
Cattle / Duck Manure	600t	3,000t	The farm currently imports 600t p.a. of cattle / duck manure from surrounding livestock farms which is then stored on muck pads and later moved to the fields. With the introduction of the AD plant, a total of 3,000t p.a. would be imported and fed into the AD plant.

Table 3.1 identifies that the proposed AD plant would require 14,950 tonnes per annum of plant energy crops and 9,000 tonnes per annum of manures associated with the wider farm application annually.

3.6 Proposed Vehicular Movements

3.6.1 Proposed Feedstock Movements

Based on the materials and tonnage detailed in **Table 3.1**, **Table 3.2** and **Table 3.3** provide a breakdown of the annual traffic movements that would be associated with the feedstocks for the proposed AD plant.

Table 3.2: Proposed Annual Traffic Movements associated with Feedstocks

Material	Notes	Maize	Grass	Straw	Total
Hectarage (ha)	Approximate area of each crop grown as an average over the past 4-5 years	78ha	111ha	100ha	
Plant Crops					
Average crop yield (t/ha)	Five year average	45t/ha	45t/ha	8t/ha	
Total crop yield (t)	Development proposals	3,500t	5,000t	800t	
Transport to AD plant					
Average load size to AD plant (t)	Based on total crop yield and average load size to AD plant. 3,500t of maize to be fed into the AD plant.	12t	12t	7t	
Number of vehicles arriving	Based on total crop yield and average load size to farm store	292	417	111	820
Residual transport in and out of the farm store					
Average load size out of farm store (t)	Based on historic vehicle capacity	26t	0t	0t	
Number of vehicles in for crop harvest and out for export	Remainder of plant crops after accounting for the AD plant.	0	0	0	0
Artificial Fertiliser					
Nitrogen use (Kg N/ha)	Use of digestate will reduce/ remove the need for fertilisers. However, as a conservative estimate a 50% reduction has been adopted.	75Kg K/ha	75Kg K/ha	0Kg K/ha	
Nitrogen concentration (%)		35%	35%	0%	
Total nitrogen fertiliser brought in (t)	Based on nitrogen use, concentration and hectarage	0t	0t	0t	
Average load size (t)		28t	28t	0t	
Number of vehicles arriving (bringing in fertiliser)	Based on total nitrogen fertiliser brought in and average load size	0	0		
Number of vehicles arriving (applying fertiliser)		3	3	0	
Total no of vehicles arriving for fertiliser	Total no of vehicles associated with bringing in and applying fertiliser	3	3	0	6
Potash use (Kg K/ha)		115Kg K/ha	125Kg K/ha	0Kg K/ha	
Potash concentration (%)		60%	60%	0%	
Total potash fertiliser brought in (t)	Based on potash use, concentration and hectarage	0t	0t	0t	
Average load size (t)		26t	26t	0t	
Number of vehicles arriving (bringing in fertiliser)	Based on total potash fertiliser brought in and average load size	0	0	0	
Number of vehicles arriving (applying fertiliser)		3	3	0	
Total no of vehicles arriving for fertiliser	Total no of vehicles associated with bringing in and applying fertiliser	3	3	0	6
Crop Protection					
Number of vehicles arriving associated with spray passes per season		4	3	0	7
Grand Total Movements					
Total number of vehicles arriving	No of vehicles associated with the transport of plant crops, artificial fertiliser and crop protection.	302	426	111	839
Total Two-Way Vehicle Movements (arrivals + departures)	No of two-way vehicle movements	604	852	222	1,678

Table 3.3: Proposed Annual Traffic Movements associated with Bought in Straw

Material	Notes	Straw (import)	Straw (export)	Total
Straw brought in from other farms to store	Straw is not exported as it would be fed into the proposed AD plant.	5,650t	0t	
Average load size (t)		16t	0t	
No. of vehicles arriving		353	0	353
Grand Total Movements				
Total no of vehicles arriving	No of additional vehicles associated with the handling of straw	353	0	353
Total Two-Way Vehicle Movements (arrivals + departures)	No of two-way vehicle movements	706	0	706

From **Table 3.2** and **Table 3.3**, it is demonstrated that a total of 2,384 two-way annual vehicle movements would be associated with feedstocks as a result of the proposed AD plant.

3.6.2 Proposed Movement of Manures

As the pig farm is located within proximity of the proposed AD plant and material would be transferred internally, there would be no highways trips associated with the import of the Deal Farm pig manures to the AD plant.

Based on the applicable materials and tonnage detailed in **Table 3.1**, **Table 3.4** provides a breakdown of the annual traffic movements that would be associated with manures on the proposed AD plant. This includes the continued spread of 1,000t pig manure to fields as occurs at present.

Table 3.4: Proposed Annual Traffic Movements Associated with Manures

Material	Notes	Own Poultry Litter	Dry Pig Muck	Wet Pig Muck	Bought in Muck	Total
Annual tonnage (t)		500t	3,600t	2,900t	3,000t	
Average load size (t)		13t	6t	16t	26t	
No of vehicles arriving	No of vehicles associated with the transport from livestock shed to AD plant. Poultry manures from the chicken shed located south of Kenninghall Road. Pig manures from the pig shed on Deal Farm to be imported to AD plant via internal route.	39	0	0	115	154
Tonnage to be spread	Up to 1,000t Pig manure moved from muck pad to field to be spread (25% spread direct from pad)	0t	375t	375t	0t	
Average load size (t)		0t	10t	16t	0t	
No of vehicles arriving	No of vehicles associated with the transport from the muck pad to field	0	38	23	0	61
Grand Total Movements						

Material	Notes	Own Poultry Litter	Dry Pig Muck	Wet Pig Muck	Bought in Muck	Total
Total no of vehicles arriving	No of vehicles associated with the handling of manure	39	38	23	115	215
Total Two-Way Vehicle Movements (arrivals + departures)	No of two-way vehicle movements	78	76	46	230	430

From **Table 3.4**, it is evidenced that a total of 430 two-way annual vehicle movements would be associated with manures as a result of the proposed AD plant.

3.6.3 Additional Material Movements associated with the AD By-Products

In addition to the feed materials to be fed into the proposed AD plant, there would be traffic movements associated with the by-products of the AD process. These are considered in **Table 3.5**.

Table 3.5: Anticipated Additional Annual Movements Associated with the AD By-Products

Material	Notes Source	Solid Digestate (Export)	Liquid Digestate (Export)	CO2 Removal (Export)	Propane Delivery (Import)	Total
Total annual tonnage (t)	Estimated based on the proposed capacity of the AD plant	10,339t	10,309t	4,835t	572t	
RGA Holdings / Offsite Lagoon(s)						
Tonnage used/ reused on site	Used on RGA Holdings or pumped to offsite lagoon(s).	4,800t	8,247t	4,835t	572t	
Average load size (t)	Solid digestate is taken from plant to RGA Land. Liquid digestate is used on RGA Land will be pumped and applied via umbilical pipeline/applicator using the digestate main	18t	0t	24t	22t	
No. of vehicles arriving		267	0	201	26	494
External Holdings						
Tonnage transported to external holdings	60% of solid digestate is taken out as back loads when bringing cattle and duck manure in which will happen all year around and is already accounted for.	2,216t	2,062t	0t	0t	
Average load size (t)	Solid digestate is taken out as back loads when bringing cattle and duck manure in which will happen all year around and is already accounted for.	18t	22t	0t	0t	

Material	Notes Source	Solid Digestate (Export)	Liquid Digestate (Export)	CO2 Removal (Export)	Propane Delivery (Import)	Total
No. of vehicles arriving	Liquid digestate to be pumped away from plant along network. Assumes 50% to be tankered away to growers not joining RGA land from collection points.	123	47	0	0	170
Grand Total Movements						
Total no of vehicles arriving	No of additional vehicles associated with the handling of straw	390	47	201	26	664
Total Two-Way vehicle movements (arrivals + departures)	No of two-way vehicle movements	780	94	402	52	1,328

From **Table 3.5**, it is evidenced that a total of 1,328 additional two-way movements would be associated with the operation of the proposed AD Plant in relation to by-products.

3.6.4 Total Proposed AD Plant Traffic Movements

Table 3.6 provides a summary of the total two-way traffic movements that would be associated with the proposed AD plant.

Table 3.6: Total Onsite Two-Way Proposed Annual Traffic Movements

Parameter	Traffic Movements
Feedstock movements	2,384
Movements of manures	430
Additional digestate movements	1,328
Total Two-Way vehicle movements (arrivals + departures)	4,142

Based on **Table 3.6**, the proposed AD plant would attract some 4,482 two-way vehicle movements per annum.

In addition to these heavy vehicle movements, there would be a small number of car or LGV based trips per annum, associated with occasional testing and maintenance, Health and Safety visitors and similar. These trips in smaller vehicles are estimated to constitute no more than one arrival and one departure per week and therefore have not been taken into account in the estimation of overall net change in traffic.

3.7 Net Change in Vehicular Movements

Table 3.7 provides a summary of the net change in material quantities and vehicle movements associated with the existing Application Site as a result of the proposed AD plant. A full breakdown of the net change in material quantities and associated traffic movements is provided in **Appendix E**.

Table 3.7: Summary of Net Change in Material Quantities and Associated Two-Way Traffic Movements (Proposed AD Plant – On Existing Application Site)

Materials	Proposed Operations (t)	Proposed Operations (two-way trips)	Existing Application Site (t)	Existing Application Site (two-way trips)	Net change (t)	Net Change (two-way trips)
Plant Crops						
Maize silage	3,500t	1,046	3,500t	1,567	0t	-229
Grass silage	5,000t	833	2,250t	614	2,750t	219
Straw	6,450t	928	4,520t	1,042	1,930t	-113
Fertilizer	N/A	24	N/A	32	N/A	-8
Crop protection	N/A	14	N/A	14	N/A	0
Plant Crops total	14,950t	2,383	10,270t	2,514	+4,680t	-130
Manure						
Chicken manure	500t	77	500t	135	0t	-58
Pig manure (includes a residual of up to 1,000t which will continue to be spread as at present)	6,500t	122	6,500t	2,374	0t	-2,253
Cattle/Duck manure	3,000t	231	600t	102	+2,400t	128
Manure total	10,000t	430	7,600t	2,611	+2,400t	-2,182
AD By-Products						
Solid digestate	10,339t	780	0t	0	10,339t	780
Liquid digestate	10,309t	94	0t	0	10,309t	94
Co2 removal	4,835t	322	0t	0	4,835t	403
Propane delivery	572t	52	0t	0	572t	52
AD plant totals	26,055t	1,328	0t	0	26,055t	1328
Grand Totals						
Totals	51,005t	4,141	17,870t	5,125	33,135t	-984

Table 3.7 identifies that whilst there is a net increase of 33,135t of materials to be handled as a result of the proposed AD plant, there would be a reduction of 984 annual two-way trips due to the operational efficiencies of the proposed changes. On the basis of 305 receiving days per annum, this equates to an average reduction of 3 (rounded) two-way vehicle trips daily.

3.7.1 Net Change in Vehicular Composition

The existing operations on the site use a vehicle composition made up of tractor-trailers and various heavy commercial vehicles (HCVs) including tippers and tankers of varying capacities for transporting the different materials as identified above. Given the proposed changes in operations at the Application Site compared with the existing situation, it is useful to understand the associated changes on the vehicle composition. Vehicles associated with the existing Application Site have been categorised as agricultural or commercial depending on their capacity and material carried.

This categorisation exercise has been informed by the data provided by the farm operator as well as the AD process designer. Agricultural vehicles have a laden trailer weight of no more than 18.29 tonnes. Based on the types of vehicles associated with commercial movements, the HCVs associated with the proposals would have a maximum capacity of 26 tonnes.

Principal commercial vehicles associated with the proposed operations are expected to include the following vehicle typologies:

- Tanker for CO₂ export (24t payload)²;
- Tanker for Propane import (22t payload)³;
- Rigid (net 26t) or articulated tippers (net 29t) for manures⁴;
- Tipper for solid digestate (18t payload)⁵;
- Tanker for liquid digestate (24t payload)⁶;
- Articulated lorries for fertilisers (net 28t)

It should be noted that the vehicles identified in the footnoted links are provided as examples of each vehicle type and not as a definitive visualisation of vehicles to be used.

Table 3.8 summarises the net change in vehicle composition as a result of the proposed AD plant.

The data presented in **Table 3.8** clearly demonstrates that there would be a substantial net reduction in total two-way vehicle movements of 986 per annum as a result of the proposed AD plant. Although there is a substantial net reduction in vehicle movements per annum, the change in composition includes an increase of some 142 two-way heavy commercial vehicle (HCV) movements per annum from 636 HCV movements to 778 HCV movements. On the basis of some 305 receiving days at the site per annum, this increase in HCVs equates to a modest increase on average of 0.4 additional HCV movements per operating day.

These figures only consider the changes within the Application Site, however there would be consequential effects on the traffic movements associated with the wider farm. For example, the use of digestate generated by the AD plant would reduce the quantum of fertilizers imported to the farm overall. The increase in grass yield at the farm for the AD plant would necessarily require a reduction in the yield of sugar beet. As sugar beet is exported by commercial vehicles as a food crop, it can be reasonably assumed that there would be a further proportionate reduction in commercial vehicles associated with the change in cropping. In the interests of providing as much clarity as possible on the proposed operations on the Existing Application Site, these consequential effects have not been considered on the traffic estimations set out in this TS. As a result, the conclusions drawn here represent a robust worst-case scenario.

²

https://www.ascoco2.com/fileadmin/PDF_Download/PDF_Produkte/PDF_CO2_und_Trockeneis_Zubehoer/CO2_Lagerung/en/ASCO_Transportable_CO2_Tanks.pdf

³ <https://www.rtnltd.co.uk/new-tankers/lpg-tankers/>

⁴ <https://www.mqp.co.uk/en/customer-support/transport-and-vehicle-information>

⁵ <https://www.fwi.co.uk/business/diversification/farm-energy/d-tec-shows-latest-high-capacity-tankers>

⁶ <https://www.fwi.co.uk/business/diversification/farm-energy/d-tec-shows-latest-high-capacity-tankers>

Table 3.8: Net Change in Annual Traffic Movements based on Vehicle Composition (Proposed – Existing)

	Proposed Operations (two-way movements)					Existing Application Site (two-way movements)					Net Change (two-way movements)				
	Plant Crops	Manures	Additional Movements (Straw)	Digestate	Total	Plant Crops	Manures	Additional Movements (Straw)	Digestate	Total	Plant Crops	Manures	Additional Movements (Straw)	Digestate	Total
Agricultural	1,678	200	706	780	3,364	1,460	2,566	466	0	4,492	218	-2,366	+240	+780	-1,128
Commercial	0	230	0	548	778	236	46	354	0	636	-236	+184	-354	+548	142
Total	1,678	430	706	1,328	4,142	1,696	2,612	820	0	5,128	-18	-2,182	-114	+1,328	-986

Note: minor differences in totals between tables account for rounding.

4 Proposed Traffic Routing

4.1 Introduction

Although there is a substantial net reduction in total two-way traffic movements associated with the AD plant, (from 5,215 to 4,141 vehicles) there is forecast to be a modest increase in HCVs annually equating to an average of less than one additional HCV trip per day. In practical operational terms, this means that on approximately half of the receiving days per year, there will be one additional HCV travelling on the local road network in the vicinity of the site, over and above the current levels of HCV traffic. This increase would bring the total HCV movements associated with the site to some 778 two-way movements (i.e., arrivals plus departures) per year, from 636 per year.

Allowing for HCVs to be received five days per week, and not on Bank Holidays would result in a total of 260 receiving days per year. This change in HCVs would equate to an average of 3 (rounded) two-way trips per day on the local road network.

It is arguable that an additional average of 0.4 HCVs per day, in combination with the substantial net reduction in total traffic associated with the Application Site, would not result in either an unacceptable impact on highway safety or a “severe” residual cumulative impact on the local highway network. It could therefore be reasonably concluded that this proposal would satisfy the requirements of paragraph 111 of the NPPF in relation to traffic impacts and indeed, have a net positive traffic impact by virtue of its net reduction in traffic movements.

However, it is recognised that there are concerns locally with regards to road safety. Despite the net positive traffic impact of the proposal as outlined above, a package of measures is proposed to address these concerns. The proposed measures include an identified haul route with associated highways improvements to improve the level of safety associated with the movement of HCVs to and from the site. Alongside this haul route, a series of draft conditions is proposed which would provide an auditable and enforceable means of ensuring compliance with the parameters considered in this TS in relation to:

- Total annual feedstock throughput;
- Delivery receiving hours on site;
- Cap on HCV movements; and
- Compliance with the haul route.

4.2 Off-Site Highways Improvements

A desktop study and site visit has been undertaken to evaluate the rural road network within the vicinity of the Existing Application Site to determine the most feasible routes for HCV traffic. The consideration of the haul route has taken account of:

- Number and type of frontagers on each route;
- Designation of routes;
- Foreseeable routing of vehicles (due to proximity of likely feedstock providers and CO₂ consumers) from the south to/from the site, with the A1066 being the nearest designated route in the HGV route hierarchy;
- Proximity of land under the applicant's control;
- Appropriateness of junction arrangement with the adjoining principal road in terms of geometry and available visibility; and

- Presence of hedgerows, trees and utilities apparatus along the routes.

A haul route has been identified which routes north of the A1066 via Halford Lane to The Valley. The route continues east and then north on Fersfield Road and then east onto Nordle Cor. From Nordle Cor the route continues north on Lady's Lane and then west on Kenninghall Road and on to Common Road. By avoiding the main settlement, the proposed haul route minimises impacts on the local community by routing away from the village centre and local school.

The full haul route measures 2.7 miles between the proposed AD plant's junction with Common Road and the A1066 which equates to an eight (8) minute drive at 20mph average speed, which is 1 minute further than the journey to the B1077 to the north of the site. The B1077 has been discounted due to the consequential increase in route length for vehicles to access the A1066.

The junction arrangement with the A1066 and Halford Lane is more appropriate for HCV use than the junctions to the east due to available visibility for vehicles exiting the junction. The suitability of this route is supported by the absence of any recorded personal injury collisions on the proposed haul route within the latest five-year study period (as detailed in **Section 2.5**). Further, the absence of hedgerows and mature trees along much of the route's length, as well as wide highway verges (or adjoining land held by RG Aves), means that there are fewer existing constraints to provide such improvements on this route than for other parallel routes to the south.

A suite of passing places and associated works is proposed along the haul route to improve the going along the route for all vehicles, as well as the HCV traffic associated with the AD plant. Plans detailing the proposals are presented in **Appendix F**.

The passing places are strategically located to ensure that there is intervisibility between passing places or nearby junctions wherever possible. Swept path analysis demonstrating that the passing places can enable a vehicle to pass a large tanker has also been provided.

An independent Stage 1 Road Safety Audit of the proposed off-site highways improvements is provided under a separate cover.

4.3 Adherence to the Haul Route

It is recognised that there are reasonable concerns relating to the adherence of any haul route by hauliers. As a result, it is becoming increasingly common for haulage contracts to include clauses relating to the haul route. While this is commonly used for the management of construction traffic, the necessary in-cab technology exists and can be sourced for regular haulage such as that associated with the proposed AD plant.

A clause will be specified within the contract with hauliers to oblige the use of the prescribed haul route. In addition to contractually specifying the haul route, geo-fencing of the HGVs accessing the proposed development will be employed to provide an auditable compliance check. An example of the haul route monitoring clause is provided below which would be reflected in the Delivery and Servicing Plan identified in **Section 4.4**:

'All HCV movements to the site will be via the prescribed haul route identified in the consented Transport Assessment and associated Servicing and Delivery Plan.

GPS Tracking Devices within the HCVs will monitor HCV's movements to the site and any breaches will be confirmed and automatically registered in the Delivery Management System. These will be issued to each driver upon arrival at the site.

Upon arrival at site, the Operators will verify the HCV by checking:

- *delivery details against the booking; and*

- *route compliance through the GPS Tracking records.*

At regular intervals the Delivery Coordinator will review all non-compliance alerts generated within the system and take appropriate follow up action based on the severity of the noncompliance and the notes recorded against the booking. All arrivals will be monitored and counted.'

4.4 Draft Conditions

To ensure that any impacts associated with the proposed development are no greater than those considered in this TS, it is proposed that any forthcoming planning consent include conditions on the following basis:

1. The annual throughput of material through the AD Plant shall be limited to a maximum of 23,950 tonnes per annum and records shall be kept for inspection by the County Planning Authority on request of the amount of throughput of material for the duration of operations on site.
2. No heavy commercial vehicle (HCVs) shall enter or leave the site outside of the following times 0800 to 1700 Mondays to Fridays, 0800 to 1300 on Saturdays, and not at all on Sundays or Bank Holidays except as provided for in condition 3.
3. There shall be no more than 4 heavy commercial vehicle (HCV) movements per full working day, 2 movements to and 2 movements from the site, this would be limited to two HCV movements on Saturdays (1 movement to and 1 movement from the site) and zero HCV movements on Sundays. There shall be no more than 4 HCV movements in any hour, 2 movements to and 2 movements from the site. The maximum number of HCV movements in any 4-week period shall be 70 (35 movements in and 35 movements out).

Records of all vehicle movements to and from the site, separately identifying commercial and agricultural vehicles, shall be kept and made available for inspection at the request of the Local Planning Authority. An HCV is defined for the purposes of this permission as a commercial vehicle over 7.5 tonnes laden weight.

The above limits on HCV movements will be extended for a period of two weeks in any year, to allow for the maize harvest, during which period there shall be no more than 4 HCV vehicles per hour (2 movements in, 2 movements out) in addition to the number per hour set out above, with the other limits extended pro rata. During this two-week period only, deliveries will be accepted on Sundays and Bank Holidays. Deliveries of feedstocks during the harvest period shall not occur between the hours of 2200 to 0700. The Local Planning Authority shall be informed of the dates of commencement and end of the two-week extension within five days of its commencement.

4. Prior to first use of the consented AD plant, a Servicing and Delivery Plan will be prepared and agreed in writing with the highway authority. All commercial traffic will adhere to haul route and obligations established in that Servicing and Delivery Plan.

5 Responses to Matters Arising

During the course of the previous application, several queries and concerns were raised during the determination period. Many related to content within the submission therefore, to avoid similar misunderstandings in the course of this application, queries raised and the subsequent responses are provided in this section.

5.1 Throughput of Feedstock

Issue raised: Comments received reiterate NCC's concern relating to the level of feedstock given the presence of two digesters on the site.

This concern misunderstands the nature of the AD process in generating energy. As is set out at section 3.4 of this report, the energy generated by any AD plant is determined by the bacterial process, residence time (the duration that feedstock is retained in the digester), and feedstocks used. This process can be designed in different ways depending on the types, quantities and availability of different feedstocks available in the locality of any given AD plant site. The quantum of feedstocks throughput on an AD plant is therefore principally a function of the design process and not of the design of the physical AD plant infrastructure (in this case the concern as to the total volume of tanks). As such, forecast feedstocks can be estimated and total throughput defined and controlled by import limits imposed on a site, which are auditable (and therefore enforceable) through weighbridge data in the usual way.

There is no current intent to increase throughput. The application seeks consent for a limit on throughput and it is in the applicant's interest to ensure that the proposed plant and AD process designed is suitable, efficient and commercially viable at the prescribed feedstock tonnages. Once the AD plant is operational, any increase whatsoever to the feedstock tonnages over and above the consented limits would be subject to a further planning consent and associated conditions.

Issue raised: further condition (no. 3) is proposed which would seek to limit the number of HGVs which could access the site each day. It is strongly questioned if such a condition would pass the tests set out within the NPPF as the drivers of HGV's would still have a legal right to use the public highway, granted under an Act of Parliament (the Highways Act 1980) and your highway authority would be unable to prevent that legal use by condition. In addition it is not clear how it would be enforced, by your highway authority, particularly given the other activities in the area which would continue.

It is our understanding that NCC as highway authority has accepted similar constraints to haul routes in recent decisions. These have been secured via the use of a condition which references a document (typically a Traffic Management Plan) in which the haul route, hauliers' contractual obligations, and monitoring and sanction process is set out.

Most recently, the Royal HaskoningDHV team has been involved in the Boreas offshore windfarm project. While this is a Development Consent Order (DCO) project rather than Town and Country Planning Act application, the concerns and limitations with respect to a right of passage on a highway as set out in the Highways Act are the same for both projects.

The Norfolk Boreas Offshore Wind Farm Order 2021⁷ required submission of a Traffic Management Plan at an early stage, to be agreed with the highway authority. The Traffic Management Plan⁸ was submitted in October 2020 and includes at Section 3.4, details on the agreed delivery routes and how compliance will be managed, and Section 5 outlines how it will be monitored and enforced. This Traffic Management Plan was agreed by NCC Highways. It is noted that the scale of the Boreas scheme means that a formal Traffic Management Plan Coordinator will be established by the contractor. This person will have sufficient

⁷ [The Norfolk Boreas Offshore Wind Farm Order 2021 \(planninginspectorate.gov.uk\)](https://www.planninginspectorate.gov.uk/decisions/norfolk-boreas-offshore-wind-farm-order-2021/)

⁸ [EN010087-002562-8.8 Outline Traffic Management Plan \(Version 7\) \(Clean\).pdf \(planninginspectorate.gov.uk\)](#)

resource over the lifetime of that contract to monitor compliance using the sites' booking system. For the Deal Farm AD plant, such an approach is not appropriate given its scale. For this reason, in-vehicle GPS tracking is a more appropriate means of monitoring compliance, as it requires a proportionate level of resource.

Regardless of which means of monitoring is used, failure to follow the agreed delivery routes can and should be a trigger for enforcement and/or sanctions at the Deal Farm site, in the same way that it is for the Boreas sites (see para. 167 of the Boreas Traffic Management Plan). Given that for both sites, compliance with haul routes will form part of the hauliers' contractual obligations with the sites, there is no conflict with rights of passage under the Highways Act.

Further details on the potential planning conditions are set out in the recently submitted "Section 106 Agreement and Planning Condition Heads of Terms and Supplementary Note" prepared by Howes Percival.

5.2 Catchment Area

Issue raised: Given the assumptions and claims made, any agreement would need to be both legally binding and in place for the life of the AD plant to ensure both the timeframe and the quantity of material (feedstock & digestate) is from a 'local' catchment as outlined.

Without these assurances, our significant concern remains that there is the possibility that a significant level of (if not all) feedstock would be sourced (and digestate transported) further afield than the 5 km 'local' catchment. In this scenario, all traffic would be 'new' and in addition to the existing traffic on the network, as the landowners permitted operations (and associated traffic) could continue on the network.

Further details regarding an enforceable position with respect to the locality of feedstock is set out in the recently submitted "Section 106 Agreement and Planning Condition Heads of Terms and Supplementary Note" prepared by Howes Percival.

5.3 Traffic Generation

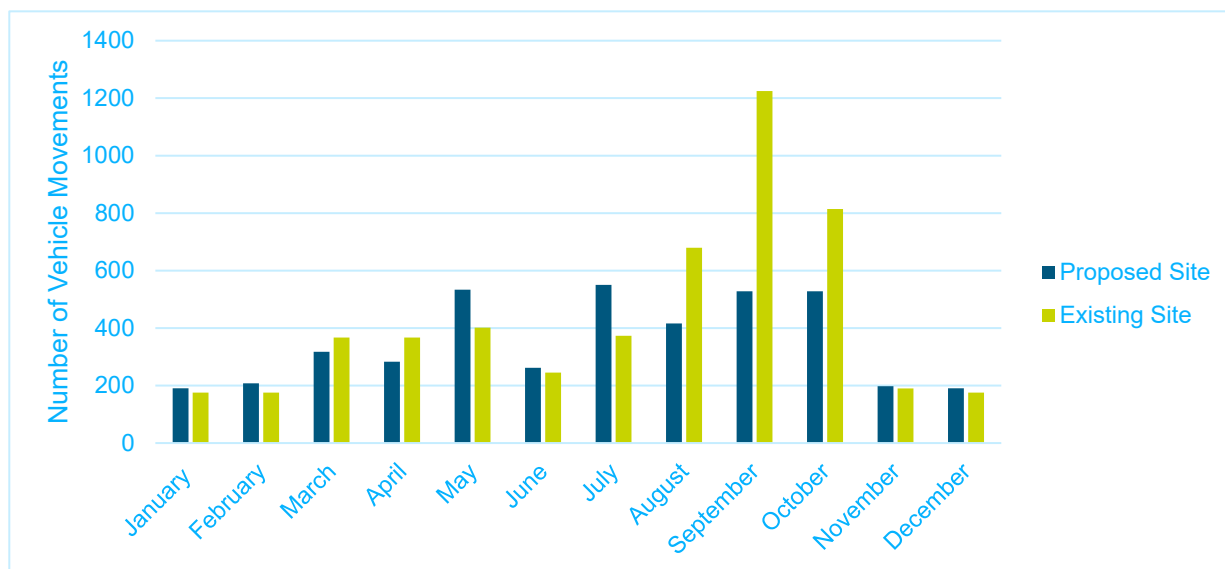
Issue raised: within the original TS it was outlined that there were typically 4,141 two way vehicle movements per annum (data from the past 5 years), whereas the current TSA suggest this figure has increased to 5,128 pa. Given this significant discrepancy, and without any detailed evidence to explain why this figure is so significantly higher, this raises doubt of the baseline figure for the assessment.

The discrepancy between the two calculations were due to the Royal HaskoningDHV team identifying formula errors in the Excel spreadsheet which was used to inform the originally submitted Transport Statement prepared by others. In addition, some of the vehicles used in the original spreadsheet were based on all movements using larger payloads. Based on our experience elsewhere, we know that there can be some variation in payloads and therefore our calculations use more appropriate vehicles and payloads which result in a modest change in numbers. Once these matters had been incorporated, the trips estimate was rather different than had been set out in the originally submitted TS. For this reason, all spreadsheet data and associated "workings" were provided in the TSA (and again in this report) to enable the reader to replicate and check our basis of calculation.

Issue raised: Also previously, at the request of the HA, the applicant provided a more detailed breakdown of the traffic figures including a monthly breakdown however this is not included within the TSA.

A graph detailing the existing and proposed monthly breakdown is provided here.

Figure 5.1 Total Two-Way Movements Annual Profile



Noting that many of the feedstocks import periods are governed by harvest periods, the proposed conditions set out in the TSA seek to smooth any significant annual peak periods for import movements, while allowing for a short exception for harvest peaks.

Issue raised: Whilst summary tables have been provided to suggest how this figure has been calculated, the assessment is lacking in any detail to evidence / validate this figure. It is noted that the assessment refers to the existing traffic generation to the application site however does this actually mean the wider farm? It is not clear.

As noted in Section 3.7.1, the traffic estimates deal only with movements to and from the Deal Farm yard site (i.e. the red line and immediately adjoining yard) and only as they relate to feedstock crops, and not to the wider farm's operations. For this reason, no consideration has been made of the reduction in trips relating to changes in cropping across the farm as a result of the AD plant being brought online (i.e., in the original TS provided to the prior application, some indication was provided of potential reductions in sugar beet crop and exports as a result of changes in feedstock crops). To provide a robust estimate of trips for this application, it has been assumed that all wider farm operations will remain as are currently the case.

Issue raised: whether sale of straw would cease. Manure tonnages generated by the farm at present. Third party imported manures and the associated payloads.

As noted in Table 3.1, the sale of straw from Deal Farm would cease as it would all be fed to the digester.

Issue raised: eliminating the double handling of pig manure with no evidence to support, results in a substantial reduction in trips. Evidence is needed to substantiate this claim, (for example it would be reasonable to assume that it would be in the applicant's benefit to spread directly to the field) or confirm that these existing movements are actually on the highway network at present.

While spreading manures direct to field can be done, this is not often done as the spreading rate depends on the nitrogen / phosphate and potassium content of the manure. The reason they are often stored is two-fold:

- They're produced all year round - however, the Environment Agency and good farming practice dictates that their fertiliser qualities should only be used when there is a crop actively taking up these nutrients. There are therefore what are commonly referred to as "spreading windows". These are further complicated by rules on spreading immediately before or after heavy rainfall (regardless of the spreading window being open or closed). As a result, the manure is often stored in heaps while the windows are closed and spread to land when the farmer is establishing a new crop (sowing and early growth). Spreading on young and established growth after a while can result in "burning" of the leaves i.e., chemicals browning new growth and stunting the crop. Once over a certain height, crops can only be fertilised with liquids using dribble bars which dribble the liquid to the base of the crop through a series of hoses dangling from the back of a horizontal bar on the tractor.
- The second is the chemical composition of the material. If materials biodegrade further when spread directly on land (e.g., raw bedding and manure that hasn't been biologically treated first) it will degrade in the soil and cause "Nitrogen Lock" whereby, instead of increasing nitrogen availability as is intended, it decreases it by locking the nitrogen into less available forms. The heaping of manures into piles and letting them "rot" minimises the potential for Nitrogen Lock.

Publicly available satellite photography and imagery is available (e.g., from Google Earth) which shows stockpiling of muck at various locations at the farm over the years and thus its double handling. If necessary, a separate note detailing this historical record can be provided.

Issue raised: unless the high percentage of back hauling can be guaranteed, it should be considered that all digestate export trips should be considered 'new'.

The TS is a technical document prepared in consultation with land owners, operators, and farming experts in the usual way, and we stand by the data contained within it. Agricultural movements associated with the site are unrestricted at present and we are proposing to provide a restriction on future movements associated with the proposed AD plant. The back hauling of material is an operational necessity given the associated time- and cost-savings. The arbitrary removal of this consideration would lead to an unrealistic worst case being presented, thereby leading to a foreseeable over-estimation of total traffic effects which would serve no practical or technical use.

Issue raised: very little information has been submitted with reference to the vehicles required to export liquid digestate. The fact that lagoons are proposed with off-take points, suggests that considerably more digestate would be produced than is required locally and therefore it is likely that new independent tanker traffic would be generated to transport the digestate to other, further afield locations.

The provision of lagoons does not suggest considerably more digestate would be produced. The total digestate production is limited by the total feedstock tonnage which is, in turn, proposed to be controlled. This issue is unfounded.

Issue raised: The haul route identified is considered wholly inadequate to cater for any significant increase in traffic.

Notwithstanding the comments elsewhere which cast doubt on the validity of the traffic data provided, as detailed in Section 4.1 of the TS, in practical operational terms the proposals would mean that on approximately half of the receiving days per year, there will be one additional HCV travelling on the local road network in the vicinity of the site, over and above the current levels of HCV traffic. This increase

would bring the total HCV movements associated with the site to some 778 two-way movements (i.e., arrivals plus departures) per year, from 636 per year. Allowing for HCVs to be received five days per week, and not on Bank Holidays would result in a total of 260 receiving days per year. This change in HCVs would equate to an average of 3 (rounded) two-way trips per day on the local road network. It is considered that this would not constitute a “significant” increase in traffic or therefore, a “severe” impact on the local road network. It is also noted that on other projects elsewhere in the county, NCC has been content to establish the need by condition for off-site works which are “similar” in nature and scale to those set out in the application. In the event that the quantum of HCV traffic to the site is low in scale i.e., not “substantial”, and the need for off-site works is agreed, then such a condition could be considered acceptable.

5.4 Highway Concern

Issue raised: It is strongly suspected that this facility will become more industrial in nature generating significant and new traffic to the area, serving wider catchments.

The applicant is seeking consent for the scheme as set out, with conditions to delimit overall impact on the local highway network. Any subsequent changes to feedstock import traffic movements etc would be subject to a further, new planning application. Fears regarding future changes to a site beyond the bounds of an application are not a reasonable basis for refusal.

6 Summary and Conclusions

This Transport Statement has been prepared by in association with the planning application for a proposed AD Plant at Bressingham (submitted to SNC on the 17 January 2023).

This report independently reviews the proposal and addresses the Highways Authority's objections associated with the highway network and the insufficient transport information provided in the previous Transport Statement for a previous planning application (ref: 2022/1108).

A review of the local highway network identified that the roads in the vicinity of the site are predominantly rural in character with narrow lanes. A review of the PICs on the local highway network indicates that there is no clustering of incidents nor a pattern relating to vulnerable road users or goods vehicles. On this basis, it is considered that there are no existing road safety trends that could be exacerbated as a result of the proposed development. Access to the proposed development would be via a new access on Common Road.

Currently, the Application Site handles 13,253 tonnes of plant crops and 6,600 tonnes of manures annually associated with the wider farm. The feedstock for the proposed AD plant would require 14,950 tonnes of plant crops and 9,000 tonnes of manures annually. All other farm operations would continue as at present.

Whilst there would be an increase in tonnage of feedstocks and manures as a result of the proposed AD plant, there would be a substantial net reduction of 984 two-way vehicle movements per annum. This would offset the modest increase of 142 two-way heavy commercial vehicle (HCV) movements per annum. It is thus concluded that overall, the proposal would have a net positive traffic impact.

Given the net positive traffic impact, it is considered that there is no specific requirement for mitigation. However, given the concerns of local residents with respect to road safety, a package of measures has been developed to improve the level of safety associated with the movement of HCVs to and from the site. These measures include off-site highways improvements to the proposed haul route, the contractual means of ensuring compliance with that haul route, and the applicant has expressed willingness for any forthcoming planning consent to be conditioned to ensure that any impacts associated with the proposed development are no greater than those considered in this TS.

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and identifies that *'Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe'*.

By highlighting that there would be a net reduction in annual two-way vehicle movements associated with the proposed AD plant and addressing the safety concerns raised, this TS has demonstrated that the development proposals would not result in a 'severe' impact on the local highway network. It is therefore concluded that there is no transport or highways reason why the proposed development should not proceed.

A NCC Objection



Tim Barker
South Norfolk Council
South Norfolk House
Swan Lane
Long Stratton
Norfolk
NR15 2XE

NCC contact number: 0344 800 8020
Text Relay - 18001 0344 800 8020

Your Ref: 2022/1108
Date: 25 August 2022

My Ref: 9/7/22/1108
Tel No.: 01603 223273
Email: jonathan.hanner@norfolk.gov.uk

Dear Tim

Construction of an Anaerobic Digestion facility (part retrospective), comprising: 1 no. digester tank and 1 no. secondary digester/digestate storage tank, silage clamps, liquid and dry feed system; digestate separation, handling and pasteurization, biogas upgrading and mains gas-grid connection; carbon capture, CHP, agricultural building; office buildings, weighbridge, 2 no. covered digestate storage lagoons, and associated plant, vehicular accesses, roads and landscaping (including earth bunds). Revised application following withdrawn planning application 2021/2788. Deal Farm Kenninghall Road Bressingham Norfolk IP22 2HG

Thank you for consulting the Highway Authority with regard to the above application.

Having considered the information submitted, I can confirm that the Highway Authority have significant concerns with regard to the proposals.

For information, the proposals have been considered by our Development Team and the comments below incorporate those raised by the Team. By way of further clarification, Development Team is made up of officers from all service areas within the Highway Authority who assess and give advice on major or complex planning applications. The team includes a safety audit representative.

As you will be aware from our responses, in relation to the previous application at this site (2021/2788), as Highway Authority we have raised significant safety concerns. The concerns were outlined in detail in my responses dated 2nd March & 5th May 2022.

In summary, the concerns were borne out of the sites remote location (from the strategic road network); the fact that all routes to / from the site are typically single track rural roads with limited opportunities for 2 vehicles to pass; the increased catchment for the feedstock and digestate; and the significant increase in feedstock (and therefore traffic) associated with the proposals. It was our view that such a facility would be better located with direct access onto the major road network.

Planning History

It is accepted that the site is located in a highly agricultural area, and that the movement of crops in large vehicles - tractor/trailer combinations, tankers, or other HGV – is 'normal' and to be expected by other road users.

Likewise, it must be acknowledged that planning permission was granted at this site, by your Authority, in 2015 for the construction of an AD plant. During this time, whilst acknowledging the shortcomings of the surrounding rural highway network, as Highway Authority we did not feel that we could substantiate a formal objection to the proposals.

This stance was based on the fact (i) the applicant already had permission for an AD plant on a nearby site, "The Oaks", which would be revoked should permissions be granted by using a S106 agreement. (ii) the feedstock would be limited to 22,360 tonnes per annum. (iii) the feedstock would be farm based products, with 60% coming from the applicant's own farm & 40% from nearby farms within 5 km. and (iv) pipelines were to be provided to pump the liquid digestate (output material) to the surrounding fields. The applicant outlined that by providing the pipelines this would reduce the number of vehicles required to remove the digestate by 85%.

Whilst acknowledging there would be an increase in traffic on the adjacent roads, it was also recognised a suitably sized AD facility would have clear synergies with the existing agricultural uses in the area and that many of the traffic movements were already on the surrounding network (associated with animal waste and feed crops) and accordingly would continue regardless of whether an AD plant were permitted. An AD plant as described has clear synergy with the rural agricultural location.

Subsequent to the above, a retrospective application was received in January 2022 (2021/2788), which sought to increase the volume of material processed to 46,750 tonnes per annum. The LHA raised safety concerns and this application was subsequently withdrawn.

Current Proposals

In an attempt to make the withdrawn proposals acceptable, the current application looks to 1) reduce the maximum annual feedstock (close to the previously permitted (2015) level, 2) has suggested that feedstock and digestate output will be from the immediate local (5km) catchment and 3) has concluded that the proposals would lead to a decrease in vehicle movements on the surrounding network.

1) Throughput of feedstock - it is now proposed that the annual feedstock would be limited to 23,950 tonnes per annum. It should however be noted that there are two digester tanks already in place on site, which according to the previous application (2021/2788) could process 46,750 tonnes per annum.

Given that presence of both tanks on site this places this lower figure in doubt, as the lower throughput would be approximately half of the available site capacity. Is the applicant suggesting that 1 tank would not be operational at all or are they going to remove the tank? Given the commercial nature of the operation and the capital outlay this seems unlikely.

Due to the previously outlined concerns, as Highway Authority, we would need to be confident that there is a reasonable expectation that these levels will not be exceeded; how this would be managed; and how you would be able to enforce this.

We therefore have significant concern that the throughput would be exceeded given the obvious available capacity on the site which would lead to further traffic to / from the site.

2) Catchment Area – The applicant has also suggested that the site will i) use energy crops grown within a 5 km radius of the AD plant, ii) that (as per the previous application) the waste feedstock will come from immediate farms and iii) the local farms would accept the digestate.

Whilst in the D&A statement, they outline that they have 335 hectares of arable land (owned by the Farm); 101 hectares of arable land (3rd party land – farmed and cropped) and undertake Straw Contracting (harvesting, baling and onward sale) – own straw (800 tonnes per annum); straw harvested and sold/swapped for muck (3,720 tonnes per annum) - the D&A fails to address the following points:-

- Are they suggesting that all of these crops will now be diverted to the AD plant?
- If this is the case is there a legal agreement in place to secure this arrangement and if so what mechanism exists to ensure it remains in place for the lifetime of the plant?
- Presumably some of this feedstock will still be required for the existing farm operations, particularly as they are already importing straw and swapping for muck?
- Are they suggesting that all other operations will cease?
- What other farms will provide feedstock?

Again, whilst they have provided a plan of the Landowners landholding, and suggested that they would divert activities to feed the AD plant, they have still not confirmed what other activities they would continue to operate or which other local farmers would also be involved.

Previously they had suggested that there was a 20 year agreement between the land owner & the AD plant owner, but there was no confirmation provided with regard to what they have committed to and what other farming activities would continue.

With regard to this application, they have again failed to provide the evidence, through a mechanism such as a S106 or similar legal agreement, to guarantee that this would be the case (and for how long). I note that they have suggest that this (the suggested radius) could be conditioned, however I would cast doubt that that this would pass the tests of the NPPF and would be problematic for your Authority to enforce.

Given there is no mechanism to ensure the feedstock would be 'local' and there is uncertainty with regard to how much would be provided by the landowner or what other activity they will continue, significant concern remains.

Without these assurances, there is the possibility that all feedstock would be sourced (and digestate transported) further afield than the 5 km catchment. In this scenario, all traffic would be 'new' and in addition to the existing traffic on the network, as the landowners permitted operations (and associated traffic) could continue on the network.

3) Traffic Generation - Notwithstanding the points raised above. Even if the AD plant could be limited to the suggested throughput and serving the local catchment as outlined there are still outstanding concerns with regard to the submitted assessment.

Within the latest TS, the applicant has attempted to provide an overview of current traffic movements associated with Deal Farm and a comparison of the traffic associated with the AD plant. The aim of which is to demonstrate that, if permitted, the AD plant would result in a reduction in traffic movements on the network.

However, as per the previous assessments, this is lacking in a number of areas of information and relies upon a number of assumptions (such as a significant saving in double handling, backhauling and a significant proportion of the input / output material coming from the local landholding).

(1) Input material

The applicant has suggested that the required 23,950 tonnes of feedstock will mainly be from the landowners local landholding and be in two forms - non-waste (56%) / farm waste (44%).

Non waste - it is outlined that 3,500 tonnes of maize silage, 5,000 tonnes of grass silage and 6,450 tonnes of straw would be required.

Whilst the available landholding of the landowner (based upon the submitted historic yields per hectare) would be sufficient to provide the required quantities of maize & silage, as previously outlined there is no legal agreement to secure this.

Clearly however, the 6,450 tonnes of straw could not be produced within the available 436 ha (based upon 8T per hectare for straw as suggested).

It is noted that, at present typically 800 T per annum is produced by the landowner with a further 3,720 tonnes imported per annum - a figure which would further increase by nearly 2,000 tonnes per annum to serve the AD plant. 800T represents just 12.5% of the straw required for the AD plant.

Despite the above increase in tonnage, the applicant is suggesting that there would be a decrease in traffic movements associated with straw as it would no longer be imported then subsequently exported from site but merely retained for use in the AD plant. It is not clear how this has been calculated and this seems highly questionable.

For example, where is the straw (which is currently being imported) being exported to? Whilst not outlined within the TS, it is understood that the majority of the existing straw is exported from the site to another AD plant. Is it guaranteed that this operation and contact will cease? Or could this continue in addition to the new facility? Is any of the straw being exported to the landowners pig, chicken, duck & cattle farms then surely this would still be required and could not be diverted to the AD plant as suggested?

Waste - It is outlined that 9,000 tonnes of farm waste would be imported '*based upon local availability*' typically consisting of 500 tonnes of chicken manure, 5,500 tonnes of pig manure and 3,000 tonnes of cattle / duck manure.

The applicants themselves outline that, at present, the landowners farms generate in the region of 6,000 tonnes of waste (and imports 600 tonnes) so even if this could all be diverted a further 3,000 tonnes would need to be imported from elsewhere. It is suggested that this would be sourced from local farms, however again no detail has been provided. The additional waste material alone would increase traffic movements to / from the site by 130 - 170 in & out movements per annum depending upon payload.

Despite the above increase in waste importation, the applicant is again suggesting that there would be a decrease in traffic movements associated with animal waste due to a reduction in double handling of pig manure. Despite my previous requests, there is very little evidence however to verify this claim (it would be reasonable to assume that it would be in the applicants benefit to spread directly to the field) or to even confirm if such 'existing' movements are actually on the highway network at present.

(2) Output material

The Transport Statement (TS) indicates that at present the applicant requires 176 tonnes of artificial nitrogen fertiliser and 30 tonnes of artificial potassium fertiliser for use on the local field which generates 42 movements per annum.

Whereas the AD plant is expected to generate approximately 23,950 tonnes of digestate (split 50/50 between solid & liquid form) per annum.

Solid Digestate

It is suggested that only 40% of the solid digestate will be transported via the highway networks as an independent trip (267 in / out movements), with the remaining 60% either spread directly on the local fields via internal roads or back hauled from site. **NB:** no breakdown has been given. However it should be noted previously that it was suggested that over half of the digestate would be backhauled.

As previously outlined, the Highway Authority accepts some of the solid digestate could be backhauled in the empty trailers as suggested, however from visiting these sites elsewhere in Norfolk it's abundantly clear the digestate is sent to different sources from that of delivery stock and the digestate goes back out on separate vehicles at different times.

Any backhauling would be limited and outgoing movements would take place throughout the year at a steady rate, usually by fast track tractor and trailer combinations, which increase the number of vehicle movements over and above the figures quoted.

I would strongly question that such a high % of digestate is capable of being backhauled from the site and would suggest that a significantly higher proportion than 40% would leave the site as independent trips.

Unless backhauling can be guaranteed, the assessment should be made based upon the worst case scenario which would be all trips on the highway network being considered as 'new'.

Liquid Digestate

It is suggested that the 11,975 tonnes of liquid digestate, which will all be pumped from the site to lagoons or pumped directly onto fields by umbilical will only result in 94 movements per annum.

Very limited information however has been submitted in support of this claim to demonstrate that this is realistic.

Based upon the submitted tanker payload this would suggest that approximately 17% (2,000 tonnes) of liquid digestate is anticipated to be tankered from one of the off take points.

The fact that lagoons are still proposed, with off-take points, would suggest that in fact considerable more digestate would now be produced than is required locally and therefore it is likely that new independent tanker traffic would be generated to transport the digestate to other, further afield locations.

In terms of overall traffic generation, whilst the latest TS does contain a breakdown of vehicle movements (existing & proposed), no evidence has been provided to verify these. As per my previous responses, I strongly suspect that those associated with the AD plant would be higher for the reasons outlined.

Highway Mitigation

A series of photos (and associated road widths) have been submitted along routes to / from the site which, although would not be considered a comprehensive assessment of the routes, do demonstrate the inadequacies of the routes (i.e. the roads are not wide enough for two vehicles to pass).

Whilst the applicant has suggested that they would consider signage and passing places, which they would agree by condition, again no firm details have been provided with regard to the level of improvements they would be willing to provide or whether such improvements can be achieved. A condition as suggested would not be acceptable as, as with any mitigation, you would need to understand the scale of the mitigation proposed and if it was proportionate.

Along with the likely traffic on each route, we would need to understand what mitigation is proposed, if it could be provided within land under the applicants control / highway, if the passing places are inter-visible. It is not acceptable to suggest that these haven't been developed as highway boundary verification requests can take 12 weeks to process and therefore they will do this after gaining permission, particularly as we were first consulted with regard to application number 2021/2788, in January 2022.

Highway Concerns

Even if the applicant could guarantee that feedstock would come from a 5 km radius, which is in doubt given the lack of legal agreements in place, this can only increase and intensify HGV / agricultural movements on a focused part of the rural network.

The application suggests that there is demand from 'local' farms to feed the facility and use all of the output material produced. I strongly suspect that this is not the case and in fact the facility will become more industrial in nature generating significant and new traffic to the area, serving wider catchments. Such a facility would be better suited to be located on the major road network.

All routes to / from the site are via the single track rural road network, many of which are designated as quiet lanes. Though 2 cars may pass each other, if driven with care, over many of these routes, the carriageway is not wide enough for a vehicle larger than a car to pass any other vehicle except at the existing informal 'passing places'. For the main part these have been formed over time by overrunning and consequent erosion of the banks and grass verge.

The site itself is currently accessed via a purpose built access onto Common Road, which was considered the most appropriate point to access the previously approved proposals. This does not justify its use by further traffic, as the routes immediately to the north & south of the site are narrow.

In addition, the off-take points are themselves located on the same single track rural network. Whilst the applicant has suggest that just 94 movements in & out would be generated from these points, I strongly suspect that this would be more, given the level of digestate suggested. Therefore a concentration of further HGV activity is likely to occur on parts of the network which, by virtue of their widths, are not suitable.

It is of course acknowledged that in this highly agricultural area, some movement of crops in large vehicles - tractor/trailer combinations, tankers, or other HGV – is 'normal' and to be expected by other road users. Nevertheless, the traffic movements generated by this proposal would be problematic for the following reasons:-

- They would be very frequent and concentrated on this particular stretch of road over a concentrated time period each year.
- During that time the movements would continue at high frequency over a very long working day, extending from early morning until late evening, and into periods of dusk and darkness.
- The existing mix of traffic on the road includes domestic cars, agricultural vehicles, tankers and other HGVs and conflict would occur with the applicant's traffic.
- In relation to the narrow sections of the routes - the only option would be to reverse the length of the previous stretch to gain refuge in an informal passing place / access : a manoeuvre which would be difficult for some drivers and for the drivers of some large vehicles, including tractor-trailers, and particularly in conditions of poor light, dusk and darkness. The consequences of a mistake could be especially severe.

You will note from the concerns raised locally that there is already concern with regard to the highway network to cater for current permitted traffic movements. This proposal would markedly intensify and exacerbate the difficulties currently experienced by the current situation, and likely lead to considerable verge erosion, the undertaking of dangerous

manoeuvres and increase the conflict between HVGs and others users of the highway, including vulnerable users.

Summary

As previously outlined, ultimately to robustly assess the proposals you as LPA, and us as LHA, need to be clear what traffic is currently associated with the landowner, how much additional traffic will be on the local network, at which points / roads they use, what other existing activities from the landowner will continue, and that the local highway network is suitable to cater for this.

The assessment is based upon the assumption that throughput of feedstock would be limited to around 50% of capacity, the land owner would be the primary provider of feedstock (both waste & non-waste) and also recipient of the digestate (solid / liquid). However, in the absence of a legal agreement, there is no guarantee that this will be the case.

We would need to have confidence that the capacity would be limited and that the feedstock and digestate output will be from the immediate local catchment, as suggested, and that this arrangement can be secured in perpetuity. If it cannot be guaranteed that this will be the case then clearly the concerns we have previously outlined, at length, in our two responses in relation to application 2021/2788 remain.

Furthermore, even if this were the case, there are a number of reductions that have been applied which cast the applicants own traffic figures in doubt. For example, a significant 'saving' is applied for the lack of double handling should the AD facility be approved particularly in relation moving of crops / muck from stores to the final destination. However it is not clear how this has been calculated. As this relates to over 1,000 in & out movements per annum it is essential that this is understood. Likewise, they have not confirmed which of the 'existing' movements they have outlined would continue.

Given that the applicants whole TS relies upon the assertion that the proposals will not increase traffic on the local road network, and will in fact decrease traffic, clearly these factors need to be considered and understood now.

Highway Authority recommendation

Given the above, the Highway Authority recommends without hesitation that this application be refused for the following reasons -

SHCR 07

The highway network serving the site is considered to be inadequate to serve the development proposed, by reason of its poor alignment / restricted width / lack of passing provision / substandard construction / restricted forward visibility. The proposal, if permitted, would be likely to give rise to conditions detrimental to highway safety. Contrary to Development Plan Policies.

SHCR 31

The application is not supported by sufficient transport information to demonstrate that the proposed development will not be prejudicial to the satisfactory functioning of the highway / highway safety. Contrary to Development Plan Policies.

Yours sincerely

Jon Hanner

Principal Engineer - Developer Services
for Executive Director for Community and Environmental Services

Please be aware it is the applicants responsibility to clarify the boundary with the public highway. Private structures such as fences or walls will not be permitted on highway land. The highway boundary may not match the applicants title plan. Please contact the highway research team at highway.boundaries@norfolk.gov.uk for further details.

B Crashmap Report



Validated Data

Crash Date: Monday, April 10, 2017

Time of Crash: 7:50:00 PM

Crash Reference: 2017360177043

Highest Injury Severity: Serious

Road Number: A1066

Number of Casualties: 1

Highway Authority: Norfolk

Number of Vehicles: 1

Local Authority: South Norfolk

OS Grid Reference: 608015 280790

Weather Description: Fine without high winds

Road Surface Description: Dry

Speed Limit: 60

Light Conditions: Darkness: no street lighting

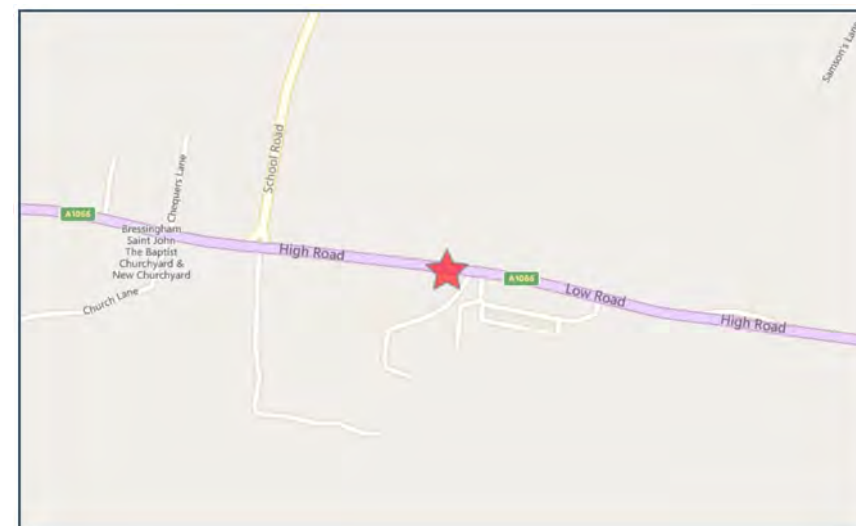
Carriageway Hazards: None

Junction Detail: Not at or within 20 metres of junction

Junction Pedestrian Crossing: No physical crossing facility within 50 metres

Road Type: Single carriageway

Junction Control: Not Applicable



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	28	Male	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	Tree

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other

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Validated Data

Crash Date: Sunday, June 25, 2017

Time of Crash: 5:30:00 PM

Crash Reference: 2017360201133

Highest Injury Severity: Serious

Road Number: U0

Number of Casualties: 1

Highway Authority: Norfolk

Number of Vehicles: 1

Local Authority: South Norfolk

OS Grid Reference: 608518 284387

Weather Description: Fine without high winds

Road Surface Description: Dry

Speed Limit: 60

Light Conditions: Daylight: regardless of presence of streetlights

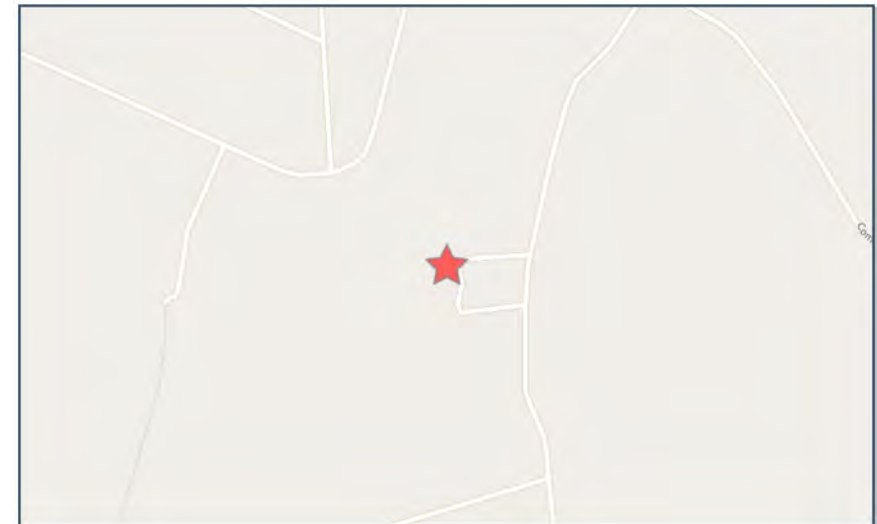
Carriageway Hazards: Other object in carriageway

Junction Detail: Not at or within 20 metres of junction

Junction Pedestrian Crossing: No physical crossing facility within 50 metres

Road Type: Single carriageway

Junction Control: Not Applicable



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Pedal cycle	-1	Male	Over 75	Vehicle proceeding normally along the carriageway, not on a bend	Did not impact	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Male	Over 75	Unknown or other	Unknown or other

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Validated Data

Crash Date: Sunday, November 05, 2017 **Time of Crash:** 11:00:00 AM **Crash Reference:** 2017360243452

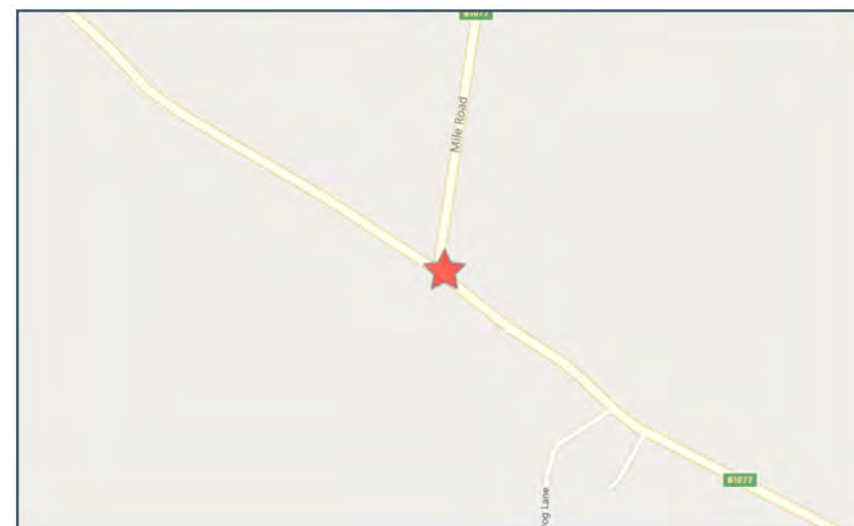
Highest Injury Severity: Serious
Highway Authority: Norfolk
Local Authority: South Norfolk
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 60
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: T or staggered junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Give way or uncontrolled

Road Number: B1077

Number of Casualties: 4

Number of Vehicles: 2

OS Grid Reference: 608970 286699



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Validated Data

Vehicles Involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	8	Male	Over 75	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Car (excluding private hire)	12	Male	21 - 25	Vehicle proceeding normally along the carriageway, on a right hand bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Vehicle or pillion passenger	Female	66 - 75	Unknown or other	Unknown or other
1	2	Serious	Driver or rider	Male	Over 75	Unknown or other	Unknown or other
2	3	Serious	Driver or rider	Male	21 - 25	Unknown or other	Unknown or other
2	4	Slight	Vehicle or pillion passenger	Female	21 - 25	Unknown or other	Unknown or other

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Validated Data

Crash Date: Monday, December 04, 2017 **Time of Crash:** 2:16:00 PM **Crash Reference:** 2017360251039

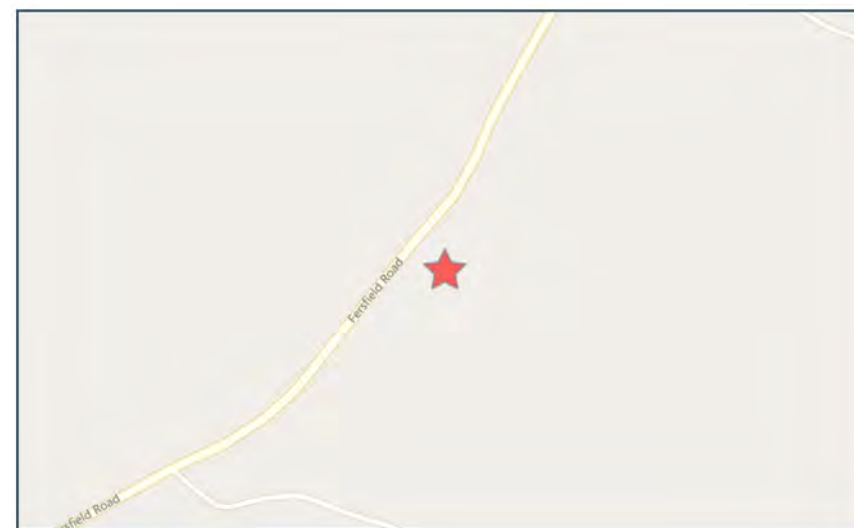
Highest Injury Severity: Slight
Highway Authority: Norfolk
Local Authority: South Norfolk
Weather Description: Fine without high winds
Road Surface Description: Wet or Damp
Speed Limit: 60
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: T or staggered junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Give way or uncontrolled

Road Number: U0

Number of Casualties: 2

Number of Vehicles: 2

OS Grid Reference: 606276 282169



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Female	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Journey as part of work	None	None
2	Car (excluding private hire)	-1	Female	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Commuting to/from work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Female	36 - 45	Unknown or other	Unknown or other
2	2	Slight	Driver or rider	Female	36 - 45	Unknown or other	Unknown or other

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Validated Data

Crash Date: Thursday, December 07, 2017 **Time of Crash:** 3:32:00 PM **Crash Reference:** 2017360252342

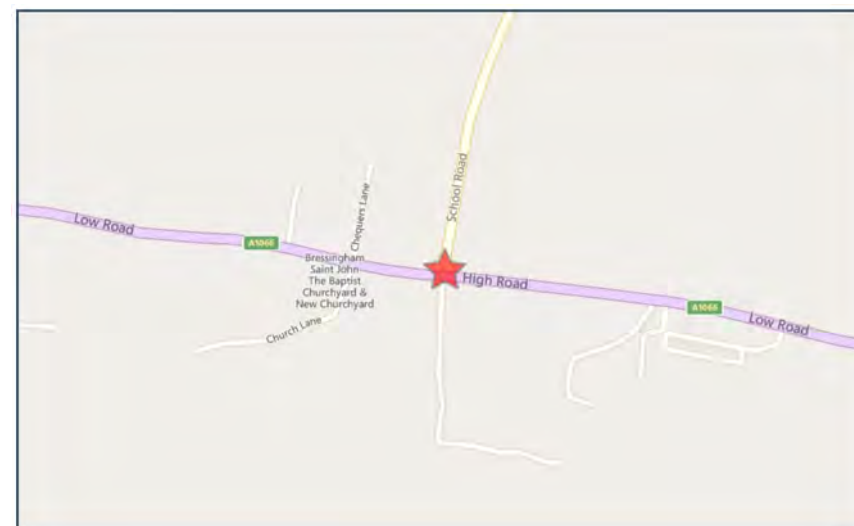
Highest Injury Severity: Slight
Highway Authority: Norfolk
Local Authority: South Norfolk
Weather Description: Fine without high winds
Road Surface Description: Wet or Damp
Speed Limit: 50
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: T or staggered junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Give way or uncontrolled

Road Number: A1066

Number of Casualties: 2

Number of Vehicles: 3

OS Grid Reference: 607733 280815



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Front	Unknown	None	None
2	Car (excluding private hire)	16	Female	21 - 25	Vehicle is waiting to proceed normally but is held up	Back	Taking pupil to/from school	None	None
3	Car (excluding private hire)	10	Female	66 - 75	Vehicle is waiting to proceed normally but is held up	Did not impact	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	21 - 25	Unknown or other	Unknown or other
3	2	Slight	Driver or rider	Female	66 - 75	Unknown or other	Unknown or other

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Validated Data

Crash Date: Friday, February 23, 2018

Time of Crash: 1:46:00 AM

Crash Reference: 2018360271634

Highest Injury Severity: Serious

Road Number: A1066

Number of Casualties: 4

Highway Authority: Norfolk

Number of Vehicles: 1

Local Authority: South Norfolk

OS Grid Reference: 608250 280755

Weather Description: Fine without high winds

Road Surface Description: Frost or Ice

Speed Limit: 60

Light Conditions: Darkness: no street lighting

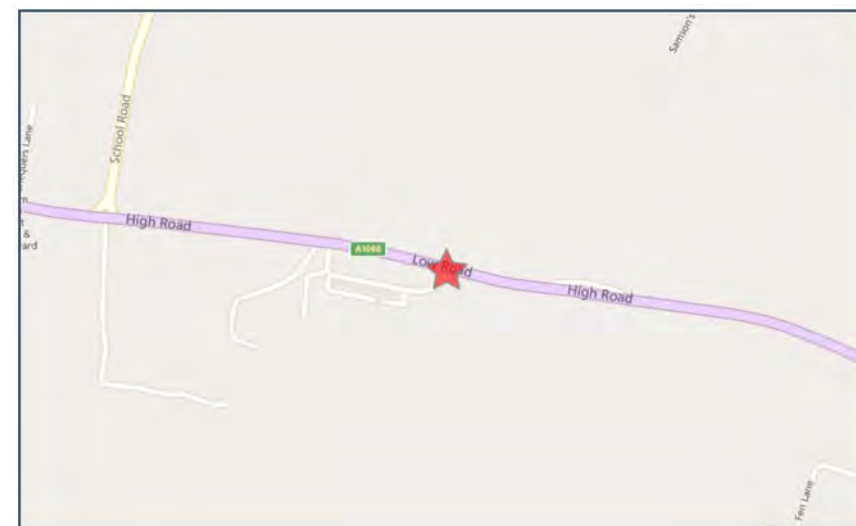
Carriageway Hazards: None

Junction Detail: Not at or within 20 metres of junction

Junction Pedestrian Crossing: No physical crossing facility within 50 metres

Road Type: Single carriageway

Junction Control: Not Applicable



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	18	Female	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	Tree

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Female	21 - 25	Unknown or other	Unknown or other
1	2	Slight	Vehicle or pillion passenger	Male	36 - 45	Unknown or other	Unknown or other
1	3	Serious	Vehicle or pillion passenger	Male	0 - 5	Unknown or other	Unknown or other
1	4	Slight	Vehicle or pillion passenger	Female	0 - 5	Unknown or other	Unknown or other

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Validated Data

Crash Date: Thursday, February 15, 2018 **Time of Crash:** 1:59:00 PM **Crash Reference:** 2018360273230

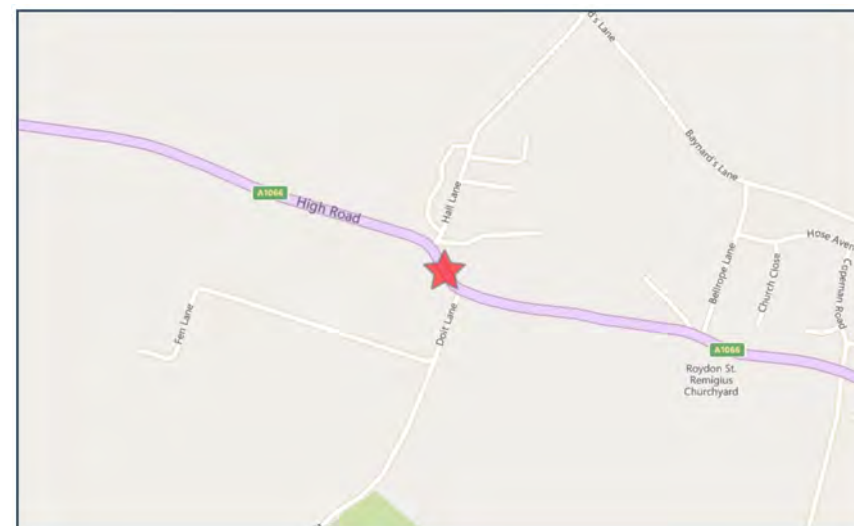
Highest Injury Severity: Slight
Highway Authority: Norfolk
Local Authority: South Norfolk
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 30
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Not at or within 20 metres of junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Not Applicable

Road Number: A1066

Number of Casualties: 2

Number of Vehicles: 2

OS Grid Reference: 609200 280529



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle over 500cc		1 Male	66 - 75	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None
2	Car (excluding private hire)		3 Female	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	66 - 75	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Male	26 - 35	Unknown or other	Unknown or other

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Validated Data

Crash Date: Sunday, April 01, 2018 **Time of Crash:** 5:20:00 PM **Crash Reference:** 2018360285680

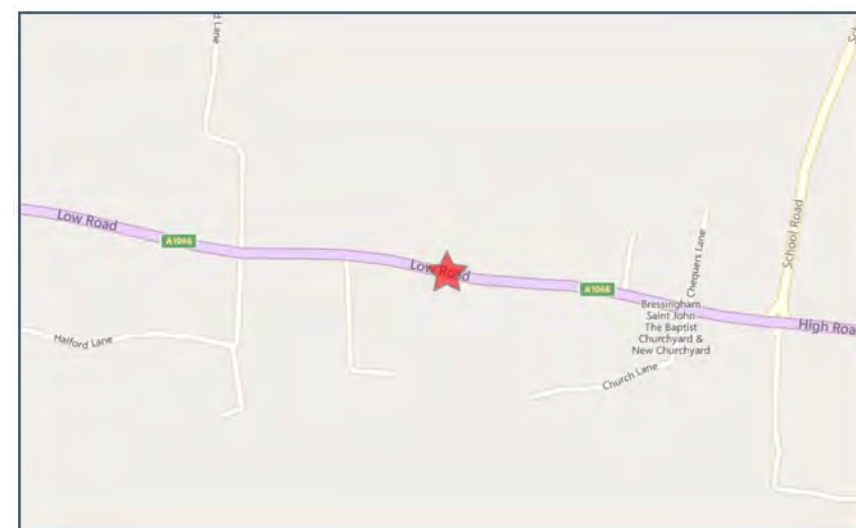
Highest Injury Severity: Serious
Highway Authority: Norfolk
Local Authority: South Norfolk
Weather Description: Raining without high winds
Road Surface Description: Wet or Damp
Speed Limit: 60
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Not at or within 20 metres of junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Not Applicable

Road Number: A1066

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 607223 280864



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	12	Male	21 - 25	Vehicle is passing another moving vehicle on its offside	Nearside	Other	None	Telegraph pole/Electricity pole
2	Car (excluding private hire)	15	Female	16 - 20	Vehicle proceeding normally along the carriageway, not on a bend	Did not impact	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Male	21 - 25	Unknown or other	Unknown or other

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Validated Data

Crash Date: Monday, October 15, 2018

Time of Crash: 3:07:00 PM

Crash Reference: 2018360335809

Highest Injury Severity: Serious

Road Number: B1077

Number of Casualties: 2

Highway Authority: Norfolk

Number of Vehicles: 2

Local Authority: South Norfolk

OS Grid Reference: 610281 286146

Weather Description: Fine without high winds

Road Surface Description: Wet or Damp

Speed Limit: 50

Light Conditions: Daylight: regardless of presence of streetlights

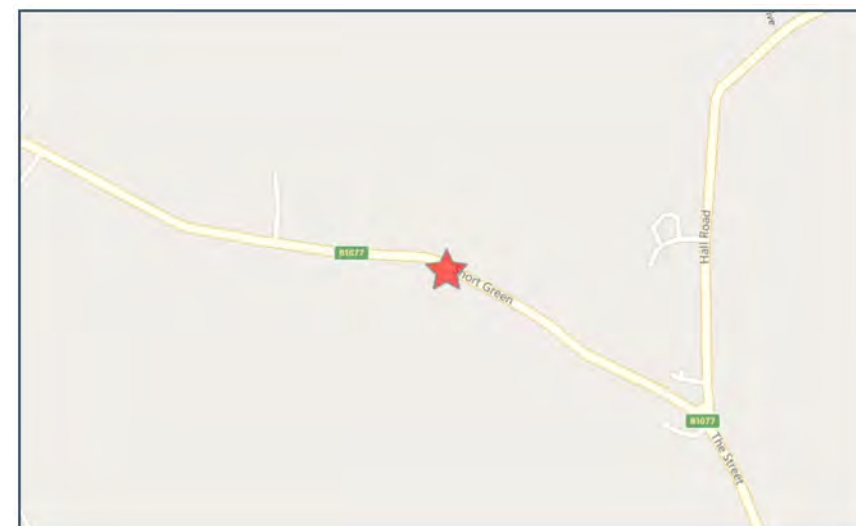
Carriageway Hazards: None

Junction Detail: Not at or within 20 metres of junction

Junction Pedestrian Crossing: No physical crossing facility within 50 metres

Road Type: Single carriageway

Junction Control: Not Applicable



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	14	Male	66 - 75	Vehicle proceeding normally along the carriageway, on a right hand bend	Nearside	Other	None	None
2	Car (excluding private hire)	9	Male	56 - 65	Vehicle proceeding normally along the carriageway, on a left hand bend	Front	Unknown	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Male	66 - 75	Unknown or other	Unknown or other
2	2	Slight	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other

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Validated Data

Crash Date: Tuesday, October 16, 2018 **Time of Crash:** 2:35:00 PM **Crash Reference:** 2018360344174

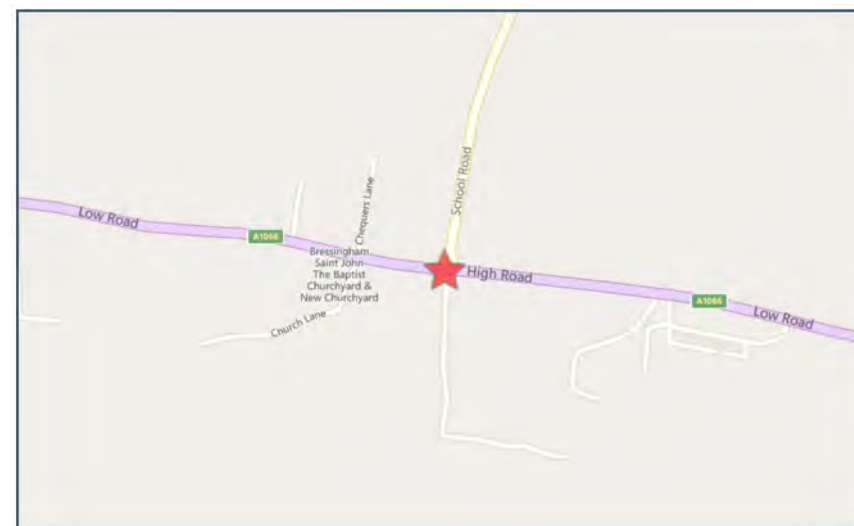
Highest Injury Severity: Serious
Highway Authority: Norfolk
Local Authority: South Norfolk
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 50
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Not at or within 20 metres of junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Not Applicable

Road Number: A1066

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 607725 280809



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Agricultural vehicle	4	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Back	Journey as part of work	None	None
2	Car (excluding private hire)	6	Male	66 - 75	Vehicle proceeding normally along the carriageway, not on a bend	Front	Unknown	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Serious	Driver or rider	Male	66 - 75	Unknown or other	Unknown or other

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Validated Data

Crash Date: Wednesday, April 03, 2019 **Time of Crash:** 9:39:00 PM **Crash Reference:** 2019360833650

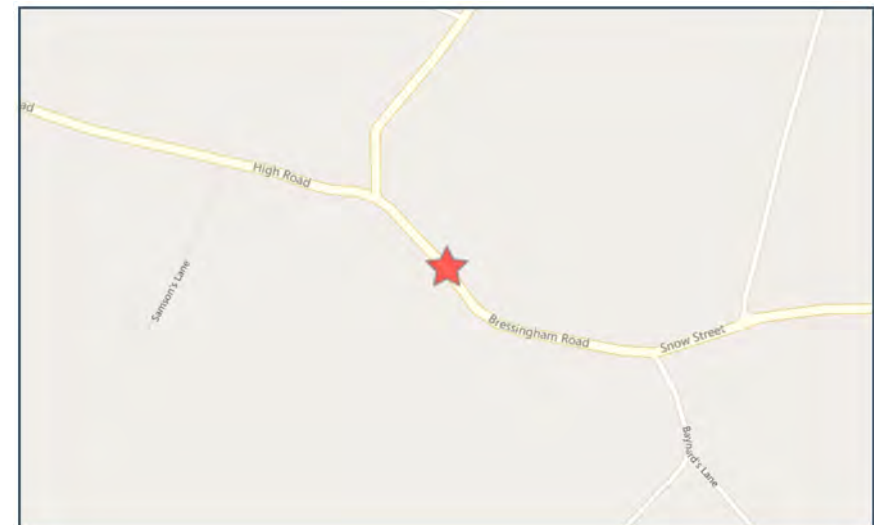
Highest Injury Severity: Slight
Highway Authority: Norfolk
Local Authority: South Norfolk
Weather Description: Fog or mist - if hazard
Road Surface Description: Frost or Ice
Speed Limit: 30
Light Conditions: Darkness: no street lighting
Carriageway Hazards: None
Junction Detail: Not at or within 20 metres of junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Not Applicable

Road Number: U0

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 609019 281194



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Van or goods vehicle 3.5 tonnes mgw and under		9 Male	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Car (excluding private hire)		-1 Female	36 - 45	Vehicle is parked in the carriageway	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other

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Validated Data

Crash Date: Friday, June 28, 2019

Time of Crash: 6:52:00 PM

Crash Reference: 2019360865116

Highest Injury Severity: Slight

Road Number: A1066

Number of Casualties: 1

Highway Authority: Norfolk

Number of Vehicles: 2

Local Authority: South Norfolk

OS Grid Reference: 606203 280942

Weather Description: Fine without high winds

Road Surface Description: Dry

Speed Limit: 60

Light Conditions: Daylight: regardless of presence of streetlights

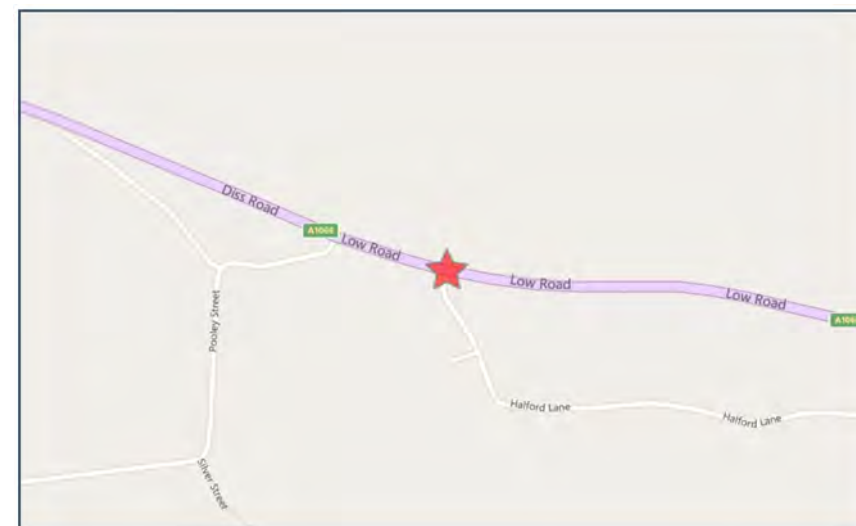
Carriageway Hazards: None

Junction Detail: T or staggered junction

Junction Pedestrian Crossing: No physical crossing facility within 50 metres

Road Type: Single carriageway

Junction Control: Give way or uncontrolled



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle 50cc and under	7	Male	16 - 20	Vehicle is in the act of turning right	Front	Unknown	None	None
2	Motorcycle over 50cc and up to 125cc	1	Male	16 - 20	Vehicle is in the act of turning right	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	16 - 20	Unknown or other	Unknown or other

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Validated Data

Crash Date: Wednesday, July 31, 2019 **Time of Crash:** 4:10:00 PM **Crash Reference:** 2019360881902

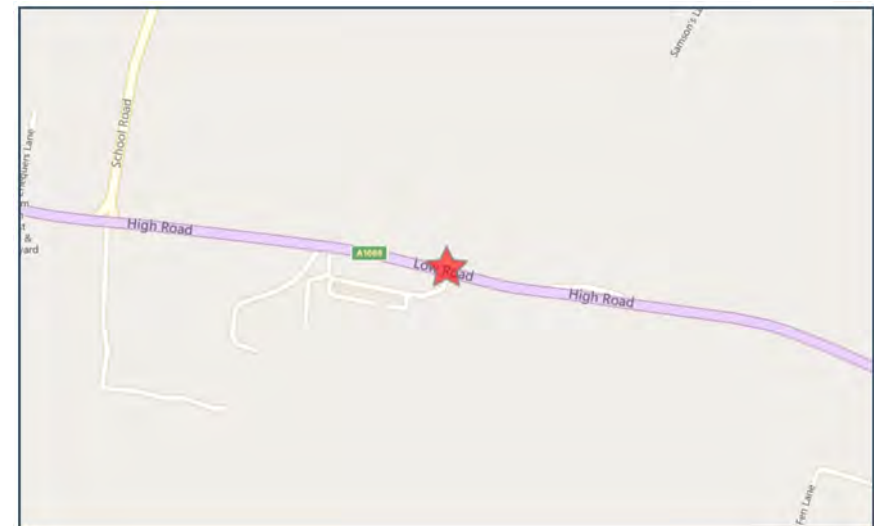
Highest Injury Severity: Slight
Highway Authority: Norfolk
Local Authority: South Norfolk
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 50
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Using private drive or entrance
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Give way or uncontrolled

Road Number: A1066

Number of Casualties: 4

Number of Vehicles: 2

OS Grid Reference: 608248 280758



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Validated Data

Vehicles Involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)		3 Female	56 - 65	Vehicle is in the act of turning right	Offside	Other	None	None
2	Agricultural vehicle		9 Male	16 - 20	Vehicle proceeding normally along the carriageway, not on a bend	Front	Journey as part of work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Female	56 - 65	Unknown or other	Unknown or other
1	2	Slight	Vehicle or pillion passenger	Female	26 - 35	Unknown or other	Unknown or other
1	3	Slight	Vehicle or pillion passenger	Male	6 - 10	Unknown or other	Unknown or other
1	4	Slight	Vehicle or pillion passenger	Male	0 - 5	Unknown or other	Unknown or other

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Validated Data

Crash Date: Thursday, October 24, 2019 **Time of Crash:** 3:54:00 PM **Crash Reference:** 2019360894735

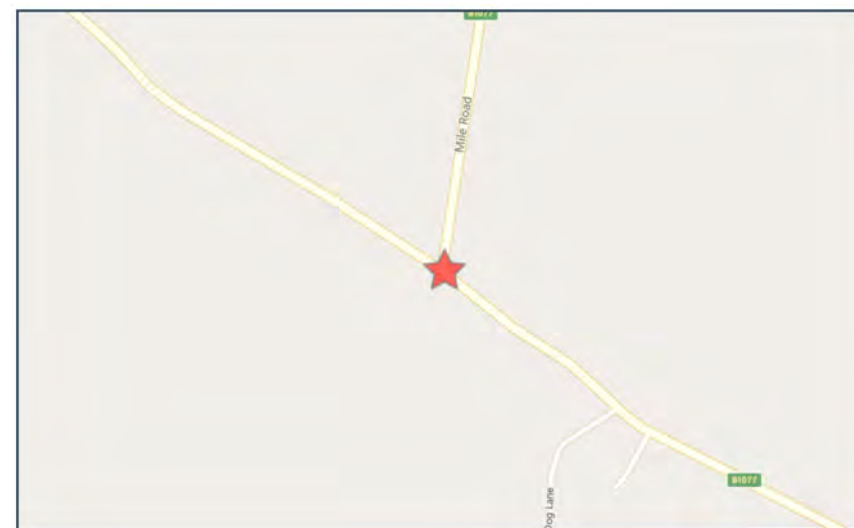
Highest Injury Severity: Serious
Highway Authority: Norfolk
Local Authority: South Norfolk
Weather Description: Raining without high winds
Road Surface Description: Wet or Damp
Speed Limit: 60
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: T or staggered junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Give way or uncontrolled

Road Number: B1077

Number of Casualties: 3

Number of Vehicles: 4

OS Grid Reference: 608963 286696



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Validated Data

Vehicles Involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	2	Female	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None
2	Car (excluding private hire)	17	Male	26 - 35	Vehicle proceeding normally along the carriageway, on a right hand bend	Nearside	Other	None	None
4	Car (excluding private hire)	2	Male	46 - 55	Vehicle proceeding normally along the carriageway, on a right hand bend	Nearside	Commuting to/from work	None	None
3	Van or goods vehicle 3.5 tonnes mgw and under	12	Male	46 - 55	Vehicle proceeding normally along the carriageway, on a left hand bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Female	36 - 45	Unknown or other	Unknown or other
1	2	Slight	Vehicle or pillion passenger	Male	6 - 10	Unknown or other	Unknown or other
2	3	Serious	Vehicle or pillion passenger	Male	21 - 25	Unknown or other	Unknown or other

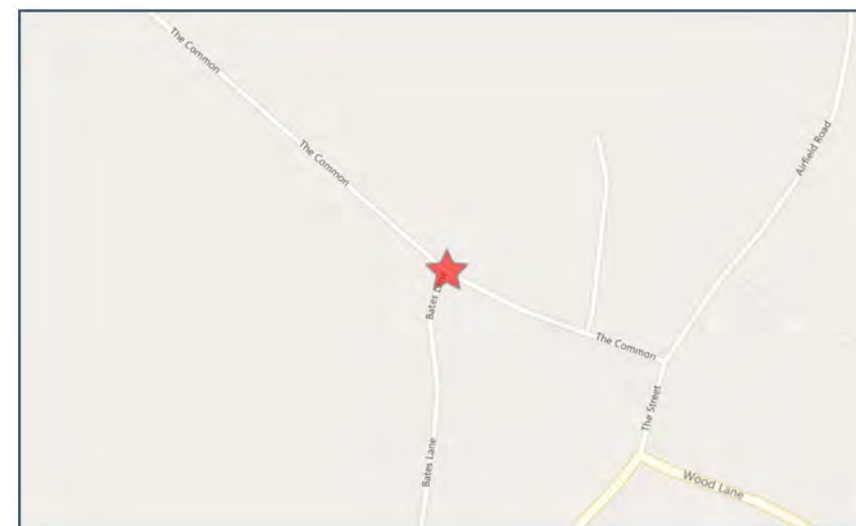
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Validated Data

Crash Date:	Wednesday, September 02, 2020	Time of Crash:	5:30:00 PM	Crash Reference:	2020360977631
Highest Injury Severity:	Fatal	Road Number:	U0	Number of Casualties:	2
Highway Authority:	Norfolk			Number of Vehicles:	1
Local Authority:	South Norfolk			OS Grid Reference:	606838 284188
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	60				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	20	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	Telegraph pole/Electricity pole

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Fatal	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other
1	2	Slight	Vehicle or pillion passenger	Male	46 - 55	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

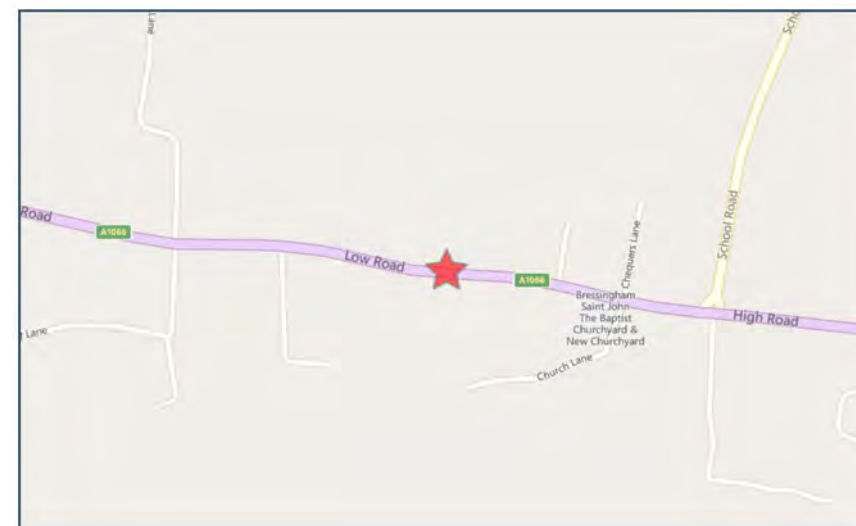
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Validated Data

Crash Date:	Saturday, November 07, 2020	Time of Crash:	8:35:00 AM	Crash Reference:	2020361003079
Highest Injury Severity:	Serious	Road Number:	A1066	Number of Casualties:	1
Highway Authority:	Norfolk			Number of Vehicles:	2
Local Authority:	South Norfolk			OS Grid Reference:	607322 280853
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	50				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	7	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None
2	Car (excluding private hire)	13	Male	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Serious	Vehicle or pillion passenger	Female	56 - 65	Unknown or other	Unknown or other

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Validated Data

Crash Date: Friday, December 18, 2020

Time of Crash: 5:30:00 PM

Crash Reference: 2020361016069

Highest Injury Severity: Slight

Highway Authority: Norfolk

Local Authority: South Norfolk

Weather Description: Fine without high winds

Road Surface Description: Dry

Speed Limit: 60

Light Conditions: Darkness: no street lighting

Carriageway Hazards: None

Junction Detail: T or staggered junction

Junction Pedestrian Crossing: No physical crossing facility within 50 metres

Road Type: Single carriageway

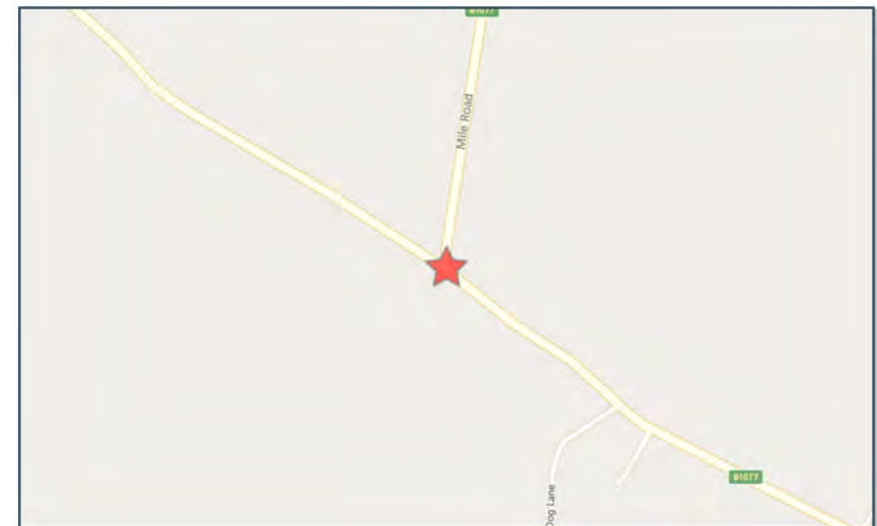
Junction Control: Give way or uncontrolled

Road Number: B1077

Number of Casualties: 2

Number of Vehicles: 2

OS Grid Reference: 608964 286695



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Van or goods vehicle 3.5 tonnes mgw and under	4	Male	46 - 55	Vehicle is in the act of turning right	Front	Journey as part of work	None	None
2	Van or goods vehicle 3.5 tonnes mgw and under	4	Male	26 - 35	Vehicle is in the act of turning left	Front	Journey as part of work	None	None

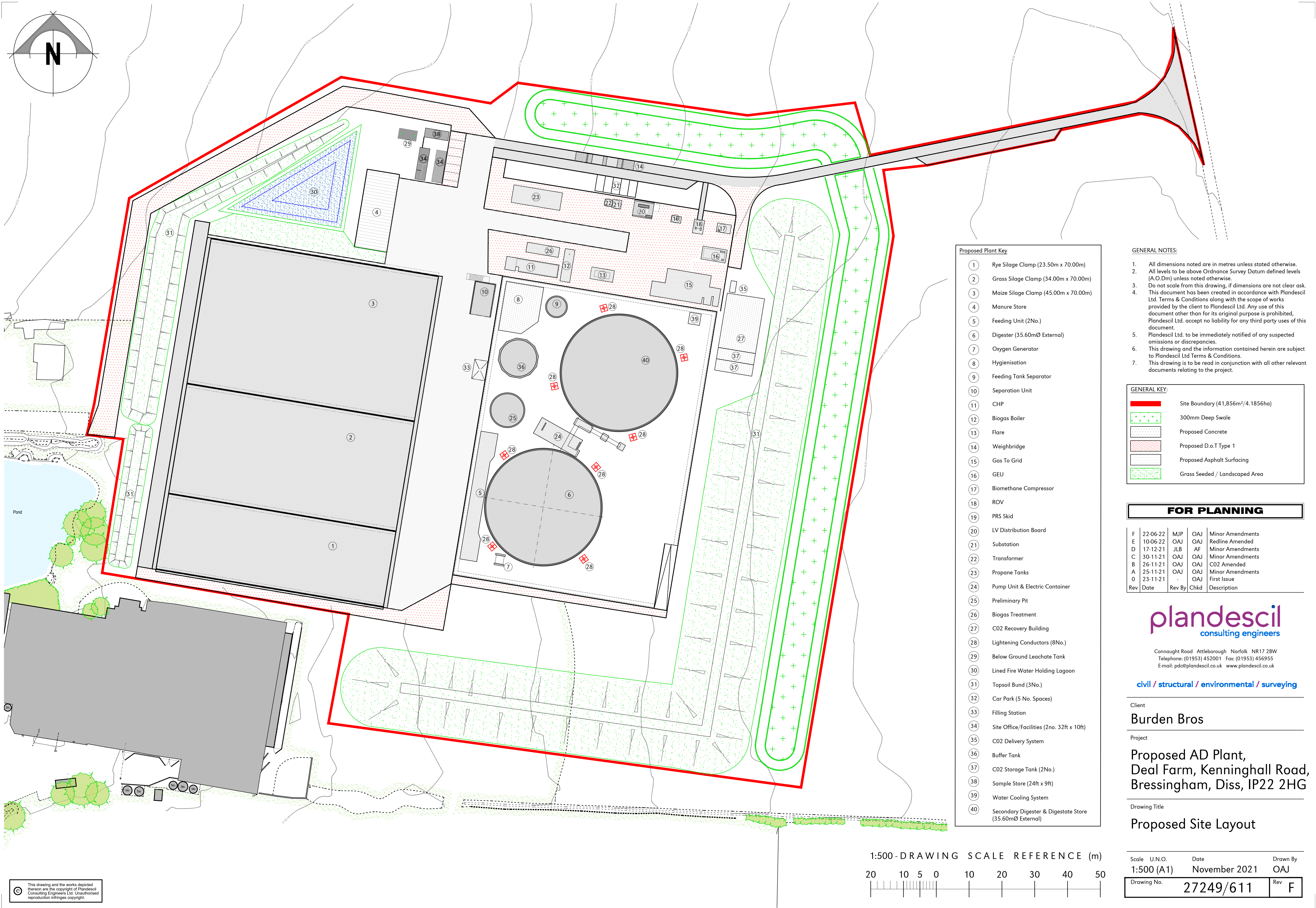
Casualties

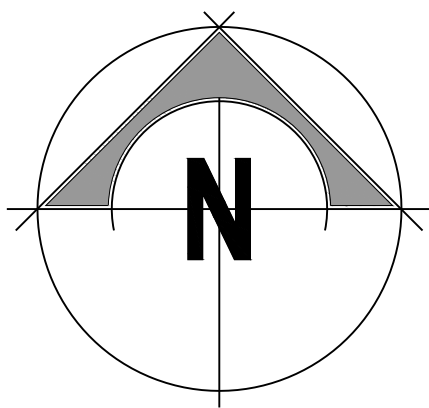
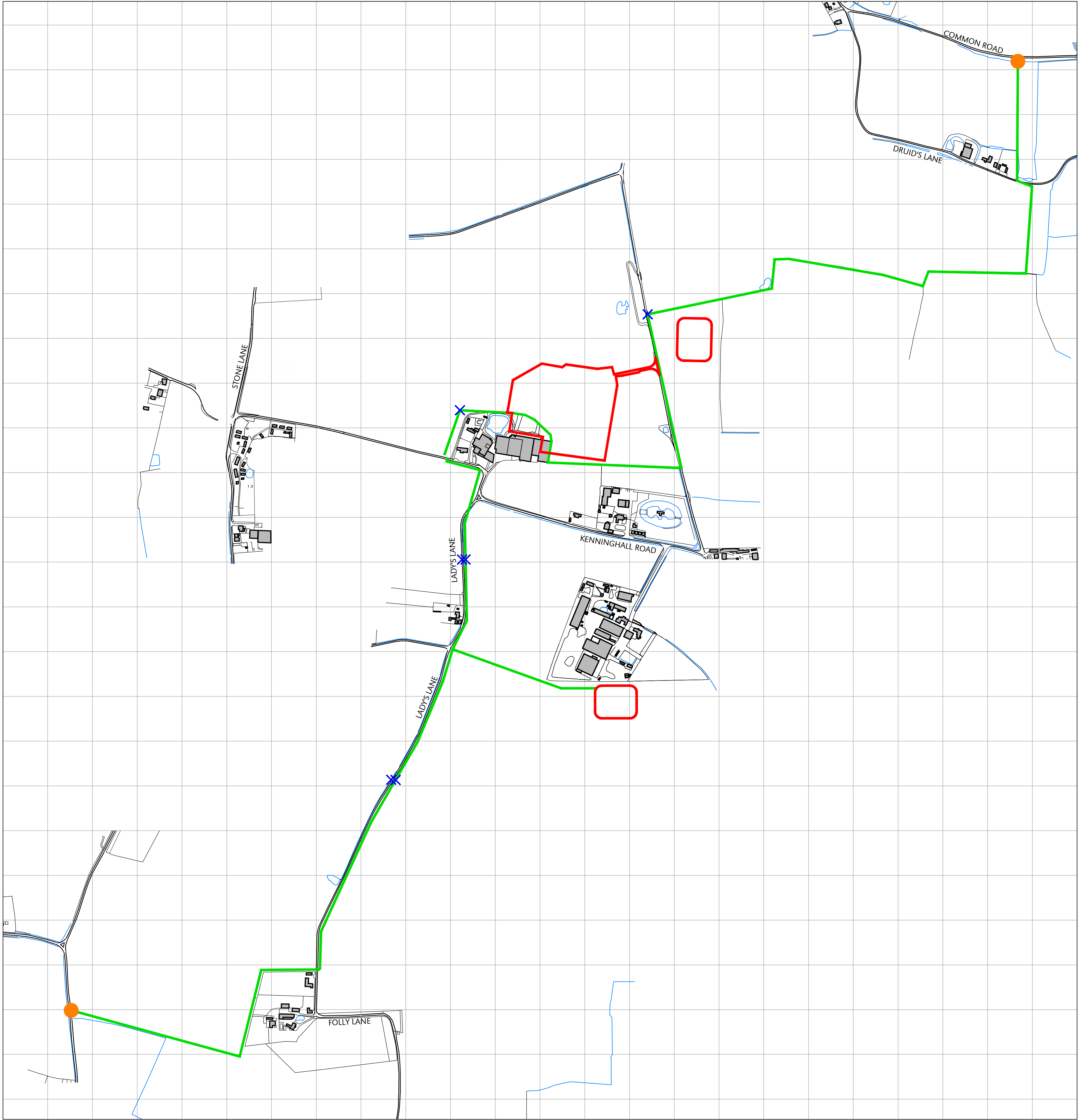
Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other
2	2	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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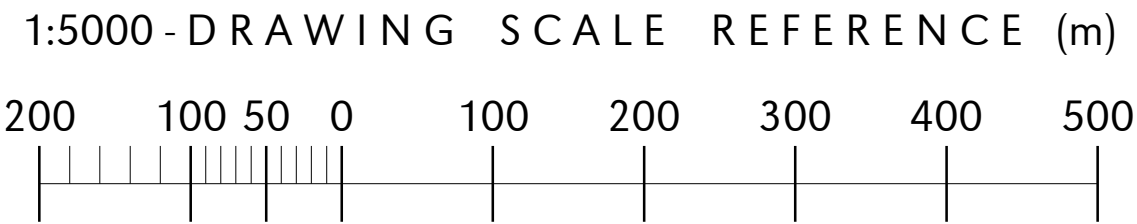
C Proposed Development Layout





Legend:			
—	AD Plant and Lagoon Redline Boundaries		
—	Proposed Digestate Pipework Routes		
●	Tanker Offtake Points for Transport to Additional Land Area.		
×	Field Offtake Points for Direct Spreading to Field		

- GENERAL NOTES:
- All dimensions noted are in millimetres unless stated otherwise.
 - All levels to be above Ordnance Survey Datum defined levels (A.O.Dm) unless noted otherwise.
 - Do not scale from this drawing, if dimensions are not clear ask.
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A	15-05-23	TOH	AF	Amended to suit comments
0	15-05-23		AF	First Issue
Rev	Date	Rev By	Chkd	Description

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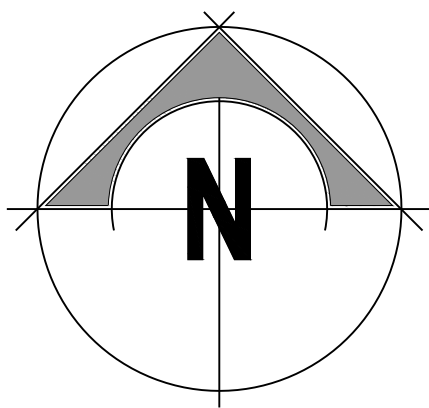
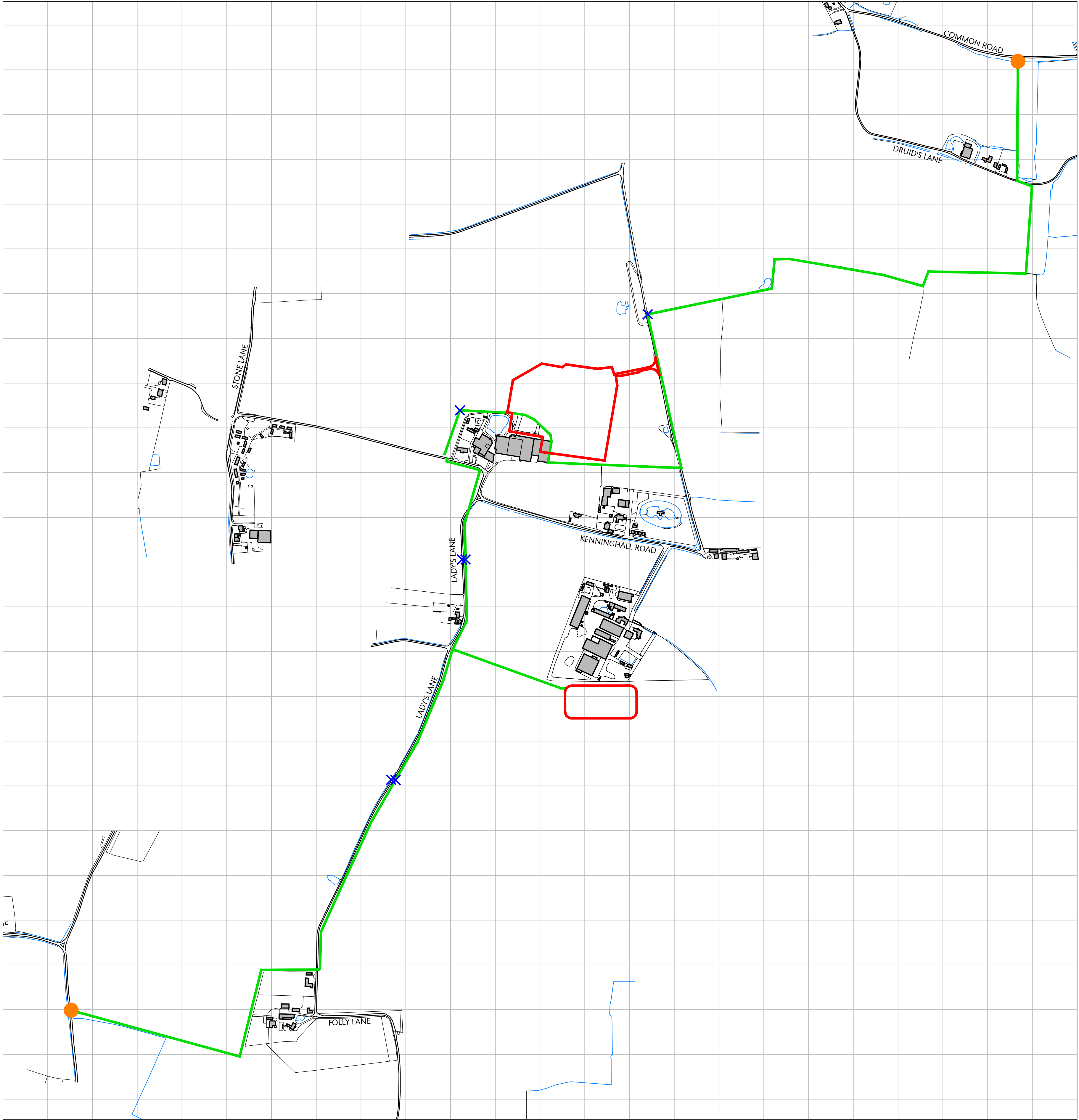
civil / structural / environmental / surveying

Client
BioWatt Site Services Ltd

Project
**Proposed Digestate Lagoon,
Land Off Common Road,
Bressingham, Diss**

Drawing Title
**Proposed Lagoon &
Pipework Routes (Option 1)**

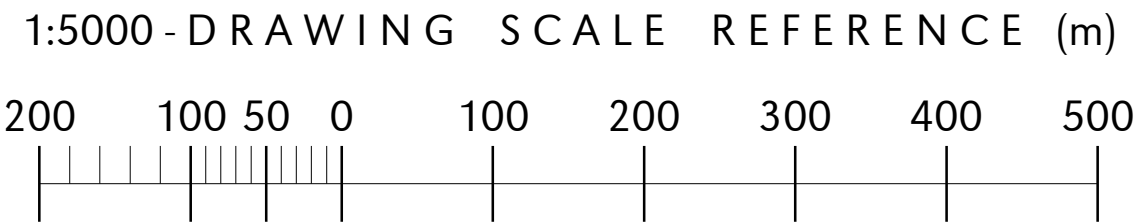
Scale	U.N.O.	Date	Drawn By
1:5000 (A1)		May 2023	EH
Drawing No.	27402/SK07	Rev	A



Legend:

- AD Plant and Lagoon Redline Boundaries
- Proposed Digestate Pipework Routes
- Tanker Offtake Points for Transport to Additional Land Area.
- Field Offtake Points for Direct Spreading to Field

- GENERAL NOTES:**
- All dimensions noted are in millimetres unless stated otherwise.
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0	15-05-23		AF	First Issue
Rev	Date	Rev By	Chkd	Description

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civil / structural / environmental / surveying

Client
BioWatt Site Services Ltd

Project
**Proposed Digestate Lagoon,
Land Off Common Road,
Bressingham, Diss**

Drawing Title
**Proposed Lagoon &
Pipework Routes (Option 2)**

Scale	U.N.O.	Date	Drawn By
1:5000 (A1)		May 2023	EH
Drawing No.	27402/SK08		Rev
			A

D Memorandum of Understanding

The following MOU Heads of Terms are intended to vary the Terms agreed between the Parties in the Feedstock Supply Agreement signed in 2021. The following

	Information needed	Details
1.	<p>Parties:</p> <p><i>(1) the Supplier</i> <i>(2) the Guarantor</i> <i>(3) the Customer</i></p>	<p>(1) BRESSINGHAM FEEDSTOCK COMPANY LIMITED a company registered in England and Wales under company number 10698340 whose registered office is at The Wherry, Quay Street, Halesworth, Suffolk, United Kingdom, IP19 8ET (the Supplier)</p> <p>(2) DESMOND AVES and TINA AVES trading in partnership as RG AVES & PARTNERS of The Oaks, Kenninghall Road, Bressingham, Diss, Norfolk IP22 2HG (the Guarantor).</p> <p>(3) DEAL FARM BIOGAS LIMITED a company registered in England and Wales under company number 10547330 whose registered office is Stublach Site, King Street, Northwich, Cheshire CW97SE (the Customer).</p>
2.	<p>Recitals: Description of Supplier's principal business operations?</p>	<p>The Customer carries on the business of the construction, commissioning, testing, operation and maintenance of an anaerobic digestion plant at the Site (the "ADP").</p> <p>The Customer wishes to purchase certain crops and other agricultural feed materials from the Supplier for use in the Customer's AD Plant.</p> <p>The Supplier is willing to procure the Feedstock, as agreed between the Parties, suitable for use in the ADP (as defined below) on the terms of this agreement.</p> <p>The Guarantor has agreed to guarantee the obligations of the Supplier as its deed.</p> <p>The Parties have already signed a ten (10) plus five (5) year Feedstock Supply Agreement in April 2021 (the "FSA"). The full commencement of services under the FSA have been delayed by the submission of a new Section 73(a) planning application and the Parties wish to formally vary the FSA to accommodate changes brought about by the new planning application by means of a "Formal Variation" – the principles of which are set out in this MOU.</p>
3.	<p>Status of This Document</p>	<p>Unless otherwise expressly stated to the contrary, these heads of terms are not legally binding, are subject to contract and to board approvals.</p>
4.	<p>Confidentiality</p>	<p>This section is legally binding</p>

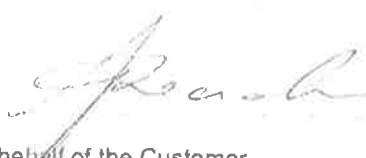
		These heads of terms and the negotiations between the parties are confidential and their content shall be kept confidential and shall not be disclosed to any third party without the consent of the other party (other than advisers/affiliates).
4.	Key Definitions:	
	Commencement Date	the Commencement Date in the FSA shall be varied to be the date of signature of the Formal Variation to the FSA.
	Contract Year	has the same meaning as the FSA
	Initial Feedstock Period	means the period starting on the Commencement Date and end on 31 March of the following calendar year.
	Site (Include appropriate site plan)	means the area edged in red on the revised red line boundary plan submitted as part of the planning application number 2022/1108 submitted to South Norfolk Council. Schedule 7 of the FSA shall be altered to reflect this change.
	Term	has the same meaning as in the FSA but in any case not less than 10 years from the Commencement Date
5.	Feedstock Plan and Forecasts:	
	Feedstock Ramp Up Plan	Within 30 days of the Commencement Date the Parties shall agree a Feedstock Ramp Up Plan to cover the period between the first seeding of the digesters and achieving the full daily feed rate.
	Schedule 1: Maximum and Minimum Commitment	Subject to the granting of permission, these shall be amended to reflect any conditions limiting the sources, types and tonnages of feedstock materials set out in the new permission.
	Schedule 2: Feedstock Plan	Within 30 days of the Commencement Date the Parties shall agree a revised Feedstock Plan for the Initial Period and Year One supply of Feedstock.
	Schedule 3: Default Feedstock Plan	shall be replaced with the table set out in Appendix 1 of this MOU
	Schedule 4: Specification	Shall remain unchanged from the Specification in the FSA
	Schedule 5: Base Prices	Shall remain unchanged from the Specification in the FSA
	Schedule 6: Feedstock Quality rice Adjustment	Shall remain unchanged from the Specification in the FSA
	Schedule 7: Site Plan	See the definition of "Site" above

6. Additional Obligations

In addition to clause 5.1.3.2 of the FSA a new obligation shall be added to the FSA to oblige the Supplier that:

EITHER THROUGH ACT OR OMISSION THE SUPPLIER SHALL not cause the Customer to lose OR BE IN BREACH OF any licence, authority, subsidy, consent or permission on which it relies for the purposes of conducting its business.

SIGNED



for and on behalf of the Customer

PRINT NAME

A LEADBETTER

SIGNED



for and on behalf of the Supplier

PRINT NAME

D.G. HUES

SIGNED



for and on behalf of the Guarantor

PRINT NAME

D. G. HUES

APPENDIX 1 – Revised Default Feedstock Plan

Feedstock Type	Annual Tonnage
Maize silage	3,500
Grass Silage	5,000
Straw	6,450
Chicken Manure/ Bedding	500
Pig Manure/ Bedding (Deal Farm)	5,500
Farm Yard Manures (3 rd Party)	3,000

E Trip Calculation Sheets

Table 1: Existing Annual Traffic Movements Associated with Plant Crops

Parameter	Notes	Maize	Grass	Straw	Total
Hectarage (ha)	Approximate area of each crop grown as an average over the past 4-5 years	78	50.0	100.0	
Plant Crops					
Average crop yield (t/ha)	Five year average	45	45	8	
Total crop yield (t)	Based on average crop yield and hectarage	3500	2250	800	
Transport in to farm store					
Average load size to farm store (t)	Based on historic vehicle capacity	12	12	7	
Number of vehicles arriving	Based on total crop yield and average load size to farm store	292	188	111	591
Transport out of farm store					
Average load size out of farm store (t)	Based on historic vehicle capacity	26	16	0	
Number of vehicles arriving for crop harvest and export	Based on total crop yield and average load size to farm store. A 15% reduction to account for clamp loss.	114	120	0	234
Artificial Fertiliser					
Nitrogen use (Kg N/ha)		150	150	0	
Nitrogen concentration (%)		34.5	34.5	0	
Total nitrogen fertiliser brought in (t)	Based on nitrogen use, concentration and hectarage	34	22	0	
Average load size (t)		28	28	28	
No of vehicles arriving (bringing in fertiliser)	Based on total nitrogen fertiliser brought in and average load size	1	1	0	
No of vehicles arriving (to pick up fertiliser)		3	3	0	
Total no of vehicles arriving for fertiliser	Total no of vehicles associated with bringing in and applying fertiliser	4	4	0	8
Potash use (Kg K/ha)		230	250	0	
Potash Concentration (%)		60	60	0	
Total Potash fertiliser brought in (t)	Based on potash use, concentration and hectarage	30	21	0	
Average load size (t)		26	26	26	
No of vehicles arriving (bringing in fertiliser)	Based on total potash fertiliser brought in and average load size	1	1	0	
No of vehicles arriving (to pick up fertiliser)		3	3	0	
Number of vehicles arriving associated with bringing in and applying fertiliser	Total no of vehicles associated with bringing in and applying fertiliser	4	4	0	8
Crop Protection					
Number of vehicles arriving associated with spray passes per season		4	3	0	7
Grand Total Movements					
Total no of vehicles arriving	No of vehicles associated with the transport of plant crops, artificial fertiliser and crop protection.	418	319	111	848
Total Two-Way vehicle movements (arrivals + departures)	No of two-way vehicle movements	836	638	222	1696

Table 2: Existing Annual Traffic Movements Associated with Manures

Parameter	Notes	Own Poultry Litter	Dry Pig Muck	Wet Pig Muck	Bought in Muck (Non Agricultural Vehicle)	Total
Annual tonnage		500	3600	2900	600	
Average load size (t)		13	6	16	26	
No of vehicles arriving	No of vehicles associated with the transport from shed to Muck pad	38	600	181	23	843
Tonnage to be spread	Manure moved from muck pad to field to be spread (25% spread direct from pad)	375	2700	2175	450	
Average load size (t)		13	10	16	16	
No of vehicles arriving	No of vehicles associated with the transport from the muck pad to field	29	270	136	28	463
Grand Total Movements						
Total no of vehicles arriving	No of vehicles associated with the handling of manure	68	870	317	51	1306
Total Two-Way vehicle movements (arrivals + departures)	No of two-way vehicle movements	136	1740	634	102	2612

Table 3: Existing Additional Annual Traffic Movements Associated with Bought in Straw

Parameter	Notes	Straw (import)	Straw (export)	Total
Straw brought in from other farms to store		3720	3720	
Average load size (t)		16	21	
No. of vehicles arriving		233	177	410
Grand Total Movements				
Total no of vehicles arriving	No of additional vehicles associated with the handling of straw	233	177	410
Total Two-Way vehicle movements (arrivals + departures)	No of two-way vehicle movements	466	354	820

Table 4: Total Existing Annual Traffic Movements (TWO-WAY)

Parameter	Traffic Movements
Feedstock movements	1696
Movement of manures	2612
Additional movements (Straw)	820
Total Two-Way vehicle movements (arrivals + departures)	5128

Table 5: Proposed Annual Traffic Movements Associated with Feedstocks

Material	Notes	Maize	Grass	Straw	Total
Hectarage (ha)	Approximate area of each crop grown as an average over the past 4-5 years	78	111	100	
Plant Crops					
Average crop yield (t/ha)	Five year average	45	45	8	
Total crop yield (t)	Development proposals	3500	5000	800	
Transport to AD plant					
Average load size to AD plant (t)	Based on total crop yield and average load size to AD plant. 3,500t of maize to be fed into the AD plant.	12	12	7	
Number of vehicles arriving	Based on total crop yield and average load size to farm store	292	417	111	820
Residual transport in and out of the farm store					
Average load size out of farm store (t)	Based on historic vehicle capacity	26	0	0	
Number of vehicles in for crop harvest and out for export	Remainder of plant crops after accounting for the AD plant.	0	0	0	0
Artificial Fertiliser					
Nitrogen use (Kg N/ha)	Use of digestate will reduce/ remove the need for fertilisers. However, as a conservative estimate a 50% reduction has been adopted.	75	75	0	
Nitrogen concentration (%)		34.5	34.5	0	
Total nitrogen fertiliser brought in (t)	Based on nitrogen use, concentration and hectarage	0	0	0	
Average load size (t)		28	28	0	
Number of vehicles arriving (bringing in fertiliser)	Based on total nitrogen fertiliser brought in and average load size	0	0		
Number of vehicles arriving (applying fertiliser)		3	3	0	
Total no of vehicles arriving for fertiliser	Total no of vehicles associated with bringing in and applying fertiliser	3	3	0	6
Potash use (Kg K/ha)		115	125	0	
Potash concentration (%)		60	60	0	
Total potash fertiliser brought in (t)	Based on potash use, concentration and hectarage	0	0	0	
Average load size (t)		26	26	0	
Number of vehicles arriving (bringing in fertiliser)	Based on total potash fertiliser brought in and average load size	0	0	0	
Number of vehicles arriving (applying fertiliser)		3	3	0	
Total no of vehicles arriving for fertiliser	Total no of vehicles associated with bringing in and applying fertiliser	3	3	0	6
Crop Protection					
Number of vehicles arriving associated with spray passes per season		4	3	0	7
Grand Total Movements					
Total number of vehicles arriving	No of vehicles associated with the transport of plant crops, artificial fertiliser and crop protection.	302	426	111	839
Total Two-Way vehicle movements (arrivals + departures)	No of two-way vehicle movements	604	852	222	1678

Table 6: Proposed Annual Traffic Movements Associated with Manures

Material	Notes	Own Poultry Litter	Dry Pig Muck	Wet Pig Muck	Bought in Muck	Total
Annual tonnage (t)		500	3600	2900	3000	
Average load size (t)		13	6	16	26	
No of vehicles arriving	No of vehicles associated with the transport from livestock shed to AD plant. Poultry manures from the chicken shed located south of Kenninghall Road. Pig manures from the pig shed on Deal Farm to be imported to AD plant via internal track.	38	0	0	115	154
Tonnage to be spread	Up to 1,000t Pig manure moved from muck pad to field to be spread (25% spread direct from pad)	0	375	375	0	
Average load size (t)		13	10	16	16	
No of vehicles arriving	No of vehicles associated with the transport from the muck pad to field	0	38	23	0	61
Grand Total Movements						
Total no of vehicles arriving	No of vehicles associated with the handling of manure	39	38	23	115	215
Total Two-Way vehicle movements (arrivals + departures)	No of two-way vehicle movements	78	76	46	230	430

Table 7: Proposed Additional Annual Traffic Movements Associated with Bought in Straw

Material	Notes	Straw (import)	Straw (export)	Total
Straw brought in from other farms to store	Straw is not exported as it would be fed into the proposed AD plant.	5650	0	
Average load size (t)		16	0	
No. of vehicles arriving		353	0	353
Grand Total Movements				
Total no of vehicles arriving	No of additional vehicles associated with the handling of straw	353	0	353
Total Two-Way vehicle movements (arrivals + departures)	No of two-way vehicle movements	706	0	706

Table 8: Proposed Additional Annual Traffic Movements Associated with Digestate

Material	Notes	Solid Digestate	Liquid Digestate	CO2 Removal	Propane Delivery	Total
Total annual tonnage (t)	Estimated based on the proposed capacity of the AD plant	10339	10309	4835	572	
RGA Holdings / Offsite Lagoons						
Tonnage used / reused on site	Used on RGA Holdings or pumped to offsite lagoons.	4800	8247	4835	572	
Average load size (t)	Solid digestate is taken from plant to RGA Land. Liquid digestate is used on RGA Land will be pumped and applied via umbilical pipeline/applicator using the digestate main	18	0	24	22	
No. of vehicles arriving		267	0	201	26	494
External Holdings						
Tonnage transported to external holdings	60% of solid digestate is taken out as back loads when bringing cattle and duck manure in which will happen all year around and is already accounted for.	2216	2062	0	0	
Average load size (t)	Solid digestate is taken out as back loads when bringing cattle and duck manure in which will happen all year around and is already accounted for.	18	22	0	0	
No. of vehicles arriving	Liquid digestate to be pumped away from plant along network. Assumes 50% to be tankered away to growers not joining RGA land from collection points.	123	47	0	0	170
Grand Total Movements						
Total no of vehicles arriving	No of additional vehicles associated with the handling of straw	390	47	201	26	664
Total Two-Way vehicle movements (arrivals + departures)	No of two-way vehicle movements	780	94	403	52	1328

Table 9: Total Proposed Annual Traffic Movements (TWO-WAY)

Material	Traffic Movements
Feedstock movements	1678
Movement of manures	430
Additional movements (Straw)	706
Digestate movements	1328
Total Two-Way vehicle movements (arrivals + departures)	4142

Table 10: Net Change in Traffic Movements Associated with Feedstocks (Proposed - Existing)

Material	Notes	Maize (On Own Land)	Grass	Straw	Total
Plant Crops					
Total crop yield (t)	Development proposals	0	2750	0	
Transport to farm store / AD plant					
Number of vehicles arriving		0	229	0	229
Transport out of farm store / Residual transport in and out of the farm store					
Number of vehicles in for crop harvest and out for export		-114	-120	0	-234
Artificial Fertiliser					
Nitrogen use (Kg N/ha)	Use of digestate will reduce/ remove the need for fertilisers. However, as a conservative estimate a 50% reduction has been adopted.	-75	-75	0	
Number of vehicles arriving (bringing in fertiliser)		-1	-1	0	
Number of vehicles arriving (applying fertiliser)		0	0	0	
Total no of vehicles arriving for fertiliser		-1	-1	0	-2
Potash use (Kg K/ha)		-115	-125	0	
Number of vehicles arriving (bringing in fertiliser)		-1	-1	0	
Number of vehicles arriving (applying fertiliser)		0	0	0	
Total no of vehicles arriving for fertiliser		-1	-1	0	-2
Crop Protection					
Number of vehicles arriving associated with spray passes per season		0	0	0	0
Grand Total Movements					
Total number of vehicles arriving		-117	108	0	-9
Total Two-Way vehicle movements (arrivals + departures)		-234	216	0	-17

Table 11: Net Change in Annual Traffic Movements Associated with Manures (Proposed - Existing)

Material	Notes	Own Poultry Litter	Dry Pig Muck	Wet Pig Muck	Bought in Muck	Total
Annual tonnage (t)		0	0	0	2400	
No of vehicles arriving		0	-600	-181	92	-689
Tonnage to be spread		-375	-2325	-1800	-450	
No of vehicles arriving		-29	-233	-113	-28	-402
Grand Total Movements						
Total no of vehicles arriving		-29	-833	-294	64	-1091
Total Two-Way vehicle movements (arrivals + departures)		-58	-1665	-588	128	-2182

Table 12: Net Change in Additional Annual Traffic Movements Associated with Bought in Straw (Proposed - Existing)

Material	Notes	Straw (import)	Straw (export)	Total
Straw brought in from other farms to store		1930	-3720	
No. of vehicles arriving		121	-177	-57
Grand Total Movements				
Total no of vehicles arriving		121	-177	-57
Total Two-Way vehicle movements (arrivals + departures)		241	-354	-113

Table 13: Net Change in Additional Annual Traffic Movements Associated with Digestate (Proposed - Existing)

Material	Notes	Solid Digestate	Liquid Digestate	CO2 Removal	Propane Delivery	Total
Total annual tonnage (t)		10339	10309	4835	572	
RGA Holdings / Offsite Lagoons						
Tonnage reused on site		4800	8247	4835	572	
No. of vehicles arriving		267	0	201	26	494
External Holdings						
Tonnage transported to external holdings		2216	2062	0	0	
No. of vehicles arriving		123	47	0	0	170
Grand Total Movements						
Total no of vehicles arriving		390	47	201	26	664
Total Two-Way vehicle movements (arrivals + departures)		780	94	403	52	1328

Table 14: Total Net Change in Annual Traffic Movements (TWO-WAY) (Proposed - Existing)

Material	Traffic Movements
Feedstock movements	-17
Movement of manures	-2182
Additional movements (Straw)	-113
Digestate movements	1328
Total Two-Way vehicle movements (arrivals + departures)	-984