

COG MOORS WWTW – PROPOSED ADVANCED ANAEROBIC DIGESTION PLANT

Construction Traffic Management Plan

NOVEMBER 2017

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VERSION CONTROL

Version	Date	Author	Description of Revision	Reviewed by:
D01	July 2017	E. Mitchell	First issue	M. Fry
D02	July 2017	E. Mitchell	Updated following LW review	M. Fry
D03	August 2017	E. Mitchell	Updated following Caulmert Ltd review	M. Fry
D04	November 2017	E. Mitchell	Report dates updated for planning submission	M. Fry

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NON-TECHNICAL SUMMARY

The purpose of this Construction Traffic Management Plan is to provide transportation advice, to assess the development impact and identify appropriate management and mitigation measures during the construction phase of the project.

Access to the proposed development throughout the construction phase will continue to be from the A4055 via Green Lane, with all HGV movements accessing the site from the south of the A4055/ Green Lane junction.

Construction vehicles will not be larger than existing operational vehicles already accessing the site. The access is therefore already able to accommodate vehicles which would visit the site during the construction phase.

Vehicle parking will be provided to accommodate all vehicle types associated with the proposed construction activities.

The peak additional daily vehicle movements during construction will be minor with 69 two-way daily trips, with the average construction day forecast to generate 41 two-way daily trips. Where possible, HGV construction deliveries will be made outside of the peak highway periods of 08:00 - 09:00, and 16:30 - 17:30. Some deliveries will be made during these hours however plans will be made to mitigate this where possible.

1 INTRODUCTION

1.1 Background

Arcadis Consulting (UK) Ltd ('Arcadis') have been commissioned by Dŵr Cymru Welsh Water (DCWW) to produce a Construction Traffic Management Plan in support of a planning application associated with the proposed development of an Advanced Anaerobic Digestion (AAD) plant situated at the existing Cog Moors Wastewater Treatment Works (WwTW) site near Dinas Powys, in the Vale of Glamorgan.

1.2 Site Location

Cog Moors WwTW is situated to the east of the A4055 Cardiff Road, approximately 2km east of Barry and 1km south of Dinas Powys. Vehicle access to the site is gained via a private road (Green Lane) which runs in a south easterly direction from its junction with the A4055. Vehicle access to the proposed development will continue to be gained from the A4055 via Green Lane. This access is not used for any other significant purpose other than for the Cog Moors WwTW.

The proposed AAD plant will operate in conjunction with the existing sewage sludge treatment facilities and is located, therefore, on the eastern side of the existing Cog Moors WwTW adjacent to the existing sewage sludge treatment infrastructure.

Part of the proposed AAD plant will be located within the existing operational area of the WwTW. The balance of the proposed development will be sited immediately to the east of the existing operational area, on an area of woodland, scrub and ruderal vegetation.

1.3 Proposed Development

The development will comprise the erection of an AAD plant at the existing Cog Moors WwTW. The proposed AAD plant will treat sewage sludge arising from wastewater treatment processes. The proposed AAD plant comprises a number of new processes and storage tanks and buildings, together with the demolition of and modifications to some existing items of plant and equipment.

Temporary construction compounds will be sited on an area of mown grassland, immediately adjacent to the existing final settlement tanks, and on an area of grassland to the east of the proposed AAD plant.

Wastewater treatment processes typically produce a treated liquid effluent (which is normally discharged to either a river or to the sea, in accordance with an appropriate discharge consent) and a sewage sludge (which is normally disposed to agricultural land, following treatment). At Cog Moors WwTW, the sewage sludge that results from the treatment of wastewaters is currently treated by anaerobic digestion. The digestion process releases biogas, which is used to generate electricity on site, whilst the sewage sludge following digestion (referred to as 'sludge cake') is then disposed of to farmland as a soil improver and fertiliser. The residual liquors produced during the sludge treatment process are returned to the WwTW inlet works for treatment.

Over recent years AAD technologies, involving thermal hydrolysis, have become well established and enable the overall digestion process to operate more efficiently, producing both increased volumes of biogas and an improved fertiliser. DCWW has installed AAD plants at its WwTW at Afan and Cardiff.

The proposed AAD plant development at Cog Moors will supplement the operation of the existing digesters (which will be refurbished) and will provide additional capacity to accept and treat sewage sludge arising from other WwTW in South Wales, in accordance with DCWW's Sludge Strategy.

The biogas produced by the proposed AAD plant will be used, via a combined heat and power (CHP) plant and boiler to generate heat and renewable electricity, for use on site or for export to the electricity grid. The sludge cake will be recycled to farmland as a high-value and sustainable fertiliser (an AAD plant produces a significantly reduced volume of sludge cake from a similar volume of sewage sludge compared with a standard anaerobic digester). The residual liquors, produced during the sludge treatment process, will be returned to the WwTW inlet works for treatment.

An upgrade will be required to the electricity connection.

The site layout of the proposed development is as shown on drawings submitted as part of the planning application package.

1.4 Purpose of the Construction Traffic Management Plan

The purpose of this Construction Traffic Management Plan is to provide transportation advice, to assess the development impact and identify appropriate mitigation measures during the construction phase of the project. The report includes details on the proposed development, together with the site's accessibility by all modes of transport. This report also provides an estimation of the likely number of vehicle trips that could be generated by the development during the construction phase and assesses the net increase in traffic flows on the highway network surrounding the site.

1.5 Purpose

This Construction Traffic Management Plan outlines the management of vehicle movements and the interaction with the surrounding road network during the various stages of the construction process. This Construction Traffic Management Plan aims to:

- Minimise the generation of traffic to and from the site;
- Ensure that materials delivered by road travel as short a distance as possible;
- Ensure that HGVs travelling to site use the approved access route; and
- Maintain and minimise the impact on the local highway network and local community.

1.6 Management

The Skanska Management Team would be based onsite during the duration of the construction period. A Site Manager would be appointed, who would ensure that all contractors and suppliers are made aware and safely implement this Construction Traffic Management Plan.

The Site Manager would liaise with Vale of Glamorgan Council where necessary.

1.7 Report Structure

The remainder of this Construction Traffic Management Plan sets out the:

- Site access and vehicle routing arrangements, together with a description of the existing transport infrastructure currently serving the site within Chapter 2;
- Proposed development and the anticipated number and nature of vehicle movements to and from the site during construction within Chapter 3;
- Anticipated base year traffic flow, together with a construction impact assessment within Chapter 4;
- Traffic management principles and the mitigation measures that could be implemented are detailed within Chapter 5; and
- Conclusions presented in Chapter 6.

2 SITE ACCESS AND ROUTING

2.1 Overview

This chapter provides details of the site access and the expected key access route for construction vehicles, together with a brief summary of the existing condition of the highway network that forms the access route.

2.2 Site Access

All construction traffic (including HGVs) would enter and leave the site via the existing Cog Moors WwTW site access Green Lane, located off A4055 Cardiff Road. The access would form the only access and egress point for the site both during the construction and operation periods. Green Lane is under private ownership only allowing access for authorised vehicles including those accessing the existing WwTW site. The carriageway is subject to a 20mph speed limit and is a narrow hedge-lined single lane retaining several passing points. No footway provision is presented along its entirety.

The A4055/ Green Lane junction provides separated one-way access entering and exiting the junction. Forward visibility for vehicles leaving the site is good and street lighting is provided adjacent to the site access. The A4055 adjacent to the junction is subject to a 30mph speed limit. Vehicles travelling both northbound and southbound can access into Green Lane, however vehicles can only travel southbound upon exit of the junction. In order to travel northbound on exit of the junction, vehicles must travel southbound for approximately 1.25km until reaching the A4055/ B4267/ A4231 roundabout and then take the fourth exit.

2.3 Vehicle Routing

Overview

Subject to confirmation of the procurement strategy and potential to source sustainably from local suppliers (to be confirmed prior to the commencement of work on site) it is proposed that all HGV construction traffic will access the Cog Moors WwTW from south of the A4055/ Green Lane junction to avoid accessibility via Dinas Powys, as shown in Photograph 1. For access via the M4 motorway to the north, this will establish a route via the A4232/ A4050/ A4231/ A4055. The A4231 and the A4050 are shown in Photographs 2 and 3.

For HGV trips arriving from the east via Cardiff, routing will also be proposed so as to avoid access through Dinas Powys with accessibility via Culverhouse Cross interconnecting to the site via the A4050/ A4231/ A4055. For trips arriving from the west, strategic roads will be utilised so as to avoid travel through central Barry with utilisation of the A4226/ A4050/ A4231/ A4055.

No restrictions are proposed for construction workers accessing the site throughout the construction period. An indicative construction HGV regional route plan has been shown as Figure 1.

Photograph 1: Green Lane



Cog Moors WWTW Proposed Advanced Anaerobic Digestion Plant – Construction Traffic Management Plan

Photograph 2: A4231 Northbound



Photograph 3: A4050 Port Road Roundabout



Figure 1 Indicative Construction HGV Regional Route Plan



Routes from the North

The key strategic route to site from the north would be via the A4232, A4050, A4231 and A4055.

A4232

The A4232, also known as the Cardiff Link Road, is a distributor road within south Wales. The road connects with the M4 Junction 33 to the north and the A4234 to the south-east. The route is a dual carriageway subject to the national speed limit. The highway is provided with good levels of lighting and whilst the route is subject to heavy flows during the AM and PM peak, off-peak traffic flows are not anticipated to present obstacles that may adversely affect construction trips generated.

A4050

From the A4232/A48/A4050 roundabout, routing would be from the southern arm, namely A4050 The A4050 Port Road, until connecting with the A4231 from the A4050/ A4231 junction in the south. The A4050 extends in an approximate north/southwest direction between the A4232/ A48/ A4050 roundabout at Caerau and the A4050/ Colcot Road/ A4226 roundabout.

The A4055 is a single carriageway for a majority of the route, and is subject to a 40mph in its northern section until 220m south of the Old Port Road junction. South of this junction, the speed limit increases to 50mph before reducing again to 40mph approximately 250m north of the A4050/ A4231 junction. A bus lane is provided on the west of the carriageway from the A4050/ Old Port Road junction to the A4050/ Caerau Lane/Nant Isaf roundabout until approximately 170m north of the A4050/ A4231 roundabout.

Footways are consistently provided along the route, including a shared pedestrian and cycle footway to the southern extent, on at least one side of the carriageway.

Signalised pedestrian crossing comprising dropped kerb, tactile paving and 'refuge path' to another crossing is situated on approach of the northern point of the A4055. Further signalised pedestrian crossings are located at the junction for Pizza Hut and Burger King, and the A4050/ Old Port junction. Dropped kerbing comprising tactile paving and refuge island is provided at the A4050/ Unnamed road leading to Caerau Lane; at the A4050/ Caerau Lane/ Nant Isaf roundabout; at the A4050/ Morfa Lane/Old Port Road; A4050/ St Andrew's Road roundabout; and at the A4050/ A4231 roundabout.

A4231

The A4231 extends from the A4050 Port Road roundabout in the north and A4055/A4231 roundabout in the south. It is bounded by residential areas to the west and mainly agricultural land to the east. The northbound carriageway comprises two lanes and the southbound a single lane, subject to a 50mph speed limit which further reduces to 30mph within the vicinity of local junctions accessing the residential areas. There is road lighting along the entire route but there are no pedestrian facilities.

The route includes the A4231/ Trem y Coed/ Gilbert Lane roundabout (Lidl roundabout) and provides dropped kerbing and tactile paving on the western and southern arms. Footways are provided on both sides of the western and southern arms, and the westbound side of the eastern arm.

A4055

From the A4231/ A4055/ B4267 (also known as the McDonalds roundabout), routing would be from the eastern arm at a distance circa 1.25km to the Cog Moors WwTW site access, namely A4055 Cardiff Road. The A4055 is a principal strategic link between Cardiff Bay and Barry with this section of the A4055 encompassing the urban settlement of Dinas Powys. The route consists of a single carriageway road subject to a 30mph speed limit. A range of local amenities front the carriageway including Eastbrook and Dinas Powys railway stations, bus stops, a primary school, local retail shops and a number of residential properties.

The northern extent of the route includes the addition of a dedicated bus lane and provision of a shared cycle/ pedestrian footway along its northern extent. Footways are situated along both sides of the carriageway within the built-up area, with several signalised and informal (dropped kerb) pedestrian crossings are located throughout. This section of highway is known to experience congestion especially during peak periods.

Routes from the East

The key strategic route to site from the east would be via the A4050, A4231 and A4055. The highway descriptions are as above. Access via Dinas Powys for large construction vehicles will be avoided.

Routes from the West

The key strategic route to site from the west would be via the A4226, A4050, A4231 and A4055.

The A4226, also known as The Five Mile Lane, is a key route linking Bonvilston to Barry and Cardiff International Airport. The A4226 is a single carriageway subject to the national speed limit in its northern extent, reducing to 40mph south of Blackland Farm.

2.4 Route Sensitivity

Collision data for the most recent five years within the study area, obtained from Crashmap¹, is summarised by severity in Table 1.

Table 1 Recorded Collisions by Severity (2012-16)

Road Link	Slight	Serious	Fatal	Total
A4231 Barry Docks Link Road	12	0	0	12
A4055 Cardiff Road (south Green Lane)	10	1	0	11
A5055 Cardiff Road (north Green Lane)	27	3	0	30
Total	49	4	0	53

The data shows that there were no recorded fatal collisions, four serious and 49 slight collisions within the recorded study area. The majority appeared to occur along Cardiff Road within the built up area of Dinas Powys, north of Green Lane. Detailed collision data and further analysis would be required to determine causation factors however it is not anticipated that the proposed development will establish an adverse impact upon existing road safety conditions. Plans illustrating the location of these accidents are presented as Appendix A.

Dinas Powys is also recognised as experiencing traffic and congestion problems, as well as the location of schools situated along or near to the A4055. The A4055 through Dinas Powys has therefore been identified as a sensitive route with routing designed to avoid large construction vehicles travelling through Dinas Powys.

Further measures to effectively mitigate the impact of construction traffic on the local and strategic network are discussed within Chapters 3 and 4 accordingly.

2.5 Sustainable Accessibility

Following consultation with the Vale of Glamorgan Council Highways Development team, there is no requirement for a Travel Plan to be provided to support the proposed planning application. The location of the existing Cog Moors WwTW is extensively restricted for access by non-car means with no direct interconnectivity to pedestrian footways or cycle routes. Although public transport opportunities are available near to the site, there are no interconnecting footways so sustainable access is extensively restricted.

Suitable car parking will subsequently be provided on site to accommodate operational workers, as well as construction workers in the short-term. Throughout the construction phase there will be a commitment towards promoting car sharing as a viable option to reduce the potential for single occupancy vehicle trips.

¹ <http://www.crashmap.co.uk/Search>

This will encompass the promotion of a formal **Park and Share** initiative with workers agreeing a specific meeting location and car sharing to and from the site. To further reduce the number of motor vehicle trips there is also potential for the Principal Contractor to provide a minibus shuttle service to collect workers offsite at an agreed collection/ drop off point to maximise its use. The latter initiative would be subject to the origin and concentration of construction workers throughout the region to establish its viability.

2.6 Baseline Traffic

Traffic flows are available from the Department for Transport (DfT) Count Point Data database. The latest available Annual Average Daily Flow (AADF) data for 2016 on the A4055 and A4231 are summarised in Table 2 for both total traffic and HGV flows (two-way).

It can be seen that HGV flows are relatively low as a percentage throughout the highway assessed. The flows identified are subsequently unlikely to be adversely affected by the proposed construction traffic, especially given the temporary increase in traffic flows associated with the construction phase. Where possible, HGV construction deliveries will be made outside of the peak highway period of 08:00 - 09:00, and 16:30 - 17:30.

Some deliveries will be made during these hours however plans will be made to mitigate this where possible. In all instances, the Skanska project management team shall monitor local peak periods and respond accordingly where vehicle conflict arises.

Table 2 Base Year 2016 AADF Traffic Flows

Road Link	Location	Count Point ID	Total Traffic	HGVs	% HGVs
A4055	Near A4055/ Green Lane junction	10630	18,239	370	2.03%
A4231	North of A4231/ A4055 junction	99962	17,221	734	4.26%

3 TRAFFIC GENERATION

3.1 Overview

This chapter sets out the traffic expected to be generated by the proposed development during the construction and existing operational phases.

3.2 Existing Operational Traffic

The number of two-way operational vehicle movements associated with existing operations at the Cog Moors WwTW has been outlined within Table 3. There are a total of 23 two-way vehicle trips (46 one-way trips) with workers arriving at the site for 08:00 and departing throughout the day. Operational HGV and light van trips associated with sludge cake export, deliveries and maintenance arrive and depart throughout the working day. The largest vehicle type currently accessing the proposed development include 44 tonne articulated trucks/ tankers.

Table 3 Existing Two-way Daily Operational Vehicle Trips at the Cog Moors WwTW

Vehicle Type	Number of Two-way Daily Trips
HGV – Sludge Cake Export	4
HGV – Deliveries	3
Cars – Operators	6
Light Vans - Maintenance	9
Bus – Education Centre	1
Total	23

3.3 Construction Traffic

Construction Programme

The exact dates for construction are to be confirmed but it is anticipated that site set-up will be implemented February/ March 2018 with the main works taking place over an 18 month period from April 2018. Commissioning of the proposed development is anticipated to take place from July 2019 over a four month period with completion programmed for December 2019. Peak construction traffic is anticipated to be generated between September 2018 and March 2019 during the main period of works.

Hours of Operation

Typical construction working hours will be:

- 08:00 to 18:00 Monday to Friday;
- 08:00 to 13:00 on Saturdays; and
- No working on Sundays or on Bank Holidays.

Construction may be undertaken outside of these hours for electrical and mechanical fit out.

Construction work outside the above times will be with prior agreement of the Local Highway Authority. Construction workers will arrive between 07:30 and 08:00 and leave between 17:00 and 19:00 with construction HGVs and vans arriving and departing throughout the day.

Where possible, HGV construction deliveries will be made outside of the peak highway periods of 08:00 - 09:00, and 16:30 - 17:30. Some deliveries will be made during these hours however plans will be made to mitigate this where possible. In all instances, the Skanska project management team shall monitor local peak periods and respond accordingly where vehicle conflict arises.

Construction Vehicles

During the construction phase there would be vehicular movements to the site associated with the delivery of construction components and materials, together with the arrival and departure of construction staff. The delivery of construction components and materials would largely be by HGVs, while staff trips are assumed to be undertaken by car or van. The proposed vehicles for construction are as follows:

- Mobile crane and 44 tonne articulated trucks/ tankers;
- Fixed wheel 7.5 tonne tankers and bull dozers (delivered on articulated trucks/ tankers); and
- Cars/ light vans

There are currently no abnormal loads proposed as part of the proposed development. Should access for abnormal/ wide loads be confirmed, this will be subject to swept path analysis along the proposed route to demonstrate accessibility to and from the site.

Construction Traffic Generations

The accompanying Transport Statement has considered the peak construction phase of the proposed development as this is when the highest traffic flows would be generated. The number of vehicles assumed in the assessment is indicative and based on best estimates (which is dependent upon a range of factors such as shipping of materials and the weather) and is in addition to existing operational two-way vehicle trips already accessing the Cog Moors WwTW site. The total number of vehicle movements generated during the peak period of construction is subsequently estimated to be 69 two-way trips (138 one-way trips) consisting of four two-way HGV trips and 65 two-way light vehicle trips (cars/ light vans). The traffic generation on the peak day of construction is set out in Table 4.

For the purpose of the assessment it has been assumed that staff would travel to the site by car or van with all construction workers based on site. To increase the robustness of the assessment, it has been assumed that all staff would drive in single-occupancy vehicles to the site establishing 50 daily two-way vehicle trips during the peak construction period, assuming no travel off-site during the day. Staff would be encouraged to car share to achieve more sustainable travel to and from the site throughout the construction phase.

Table 4 Peak Additional Daily Vehicle Trips during the Construction Phase

Vehicle Type	Number of Two-way Daily Trips
HGV – Deliveries	4
Cars – Construction workers	50
Light Vans	15
Total	69

Table 5 has also been provided to indicate the additional number of daily vehicle movements during the average construction phase (i.e. outside of the peak period of construction), estimated to be 41 two-way daily trips (82 one-way trips).

Table 5 Average Additional Daily Vehicle Trips during the Construction Phase

Vehicle Type	Number of Two-way Daily Trips
HGV – Deliveries	2
Cars – Construction workers	30
Light Vans	9
Total	41

4 IMPACTS OF CONSTRUCTION VEHICLE TRAFFIC

4.1 Introduction

This section sets out the resulting changes in network flows on the surrounding highway network and provides a summary of the subsequent traffic impact. The traffic impact assessment will focus on both the construction vehicle distribution of the development to identify 'worst case scenario' traffic flows.

4.2 Construction, Opening and Design Year

It is anticipated that construction of the proposed development will be completed December 2019. A peak construction opening year of 2019 (encompassing construction traffic) will therefore be assessed in line with the programme detailed in Section 3.3.

4.3 Traffic Growth

Growth factors were derived from National Trip End Model (NTEM) datasets and TEMPro software 6.2. TEMPro is recognised as the nationally accepted industry standard computer program for the production of local traffic growth rates. To establish 2019 base year traffic flows, a growth rate of 1.0415 (average day) has been applied to the DfT Count Point Data sites (10630 & 99962) base survey 2016 AADF traffic volumes as detailed in Table 2. A road classification of urban/ principal has been applied to both the A4055 and A4231. Table 6 summarises the base year 2019 AADF.

Table 6 Opening Year 2019 Baseline AADF

Road Link	Location	Count Point ID	2019 Baseline AADF	HGVs	% HGVs
A4055	Near A4055/ Green Lane junction	10630	18,996	385	2.03%
A4231	North of A4231/ A4055 Junction	99962	17,936	764	4.26%

4.4 Construction Impact Assessment

All construction trips have been assigned to the highway network via the A4055 and A4231 accordingly. It is assumed that all existing operational trips are already captured within the baseline AADF data. Based on a construction assessment year of 2019, Table 7 and Table 8 outline the projected short-term percentage net increases in total one-way daily traffic as a result of the average (+82 one-way trips) and peak (+138 one-way trips) construction trips respectively.

Table 7 Percentage Net Increase in 2019 AADF during the Average Construction Period

Road Link	Location	Count Point ID	2019 Baseline AADF	2019 Baseline AADF + Average Construction	% Net Increase Average Construction Flows
A4055	Near A4055/ Green Lane Junction	10630	18,996	19,078	0.43%
A4231	North of A4231/ A4055 Junction	99962	17,936	18,018	0.46%

Cog Moors WWTW Proposed Advanced Anaerobic Digestion Plant – Construction Traffic Management Plan

Table 8 Percentage Net Increase in 2019 AADF during the Peak Construction Period

Road Link	Location	Count Point ID	2019 Baseline AADF	2019 Baseline AADF + Peak Construction	% Net Increase Peak Construction Flows
A4055	Near A4055/ Green Lane Junction	10630	18,996	19,134	0.73%
A4231	North of A4231/ A4055 Junction	99962	17,936	18,074	0.77%

For both highways the % net increase is extensively low. It is therefore considered that the vehicles generated during the average and peak construction periods would have a negligible short-term impact in terms of net change in traffic flows along the expected key strategic vehicle routes.

5 TRAFFIC MANAGEMENT PRINCIPLES

5.1 Overview

This chapter sets out the Traffic Management Principles that would be adopted during the construction phase to minimise the number of vehicle movements generated by the proposed development and reduce the impact of the construction traffic on the surrounding highway network and local communities.

5.2 Traffic Management Principles

Construction Vehicle Routing Communication

All HGVs accessing the site will have to adhere to the HGV routing set out in this Construction Traffic Management Plan. Purchase orders to all suppliers will include detailed information about the required route to access the site, together with other restrictions/ requirements necessary. This information will also be communicated to suppliers at a meeting at the commencement of the contract.

Site Management

The appointed Site Manager would be in charge of Health and Safety on site. A Health and Safety board identifying potential hazards would be updated daily with all visitors required to sign in and adhere to on-site Health and Safety practices. All personnel working on site would be required to wear a high visibility vest or jacket, steel cap boots, and a hard hat as well as any other activity-specific safety wear.

Site Design

In terms of the site design, the separation of pedestrians and vehicles would be taken into consideration and the Health and Safety Executive (HSE) guidance² would be adhered to. The internal layout of the site during construction would be designed in accordance with the HSE guidance. Staff parking would be located away from the construction activity. The on-site traffic routes and unloading areas would be designated to avoid traffic congestion at the site entrance and vehicles stopping/ queuing on the highway network.

Site Access

Access to the site during construction would be controlled and manned by a Skanska gates man at the site entrance. The gates man would be responsible for controlling all traffic accessing and exiting, to ensure vehicles enter and exit the site in a safe and efficient manner. They would also be responsible for co-ordinating delivery vehicles. As set out within the HSE guidance the gates man would be trained and authorised to do so. The site entrance would be maintained, kept clear and clean.

The gates man will also be responsible for monitoring the route taken by vehicles travelling to the site, as well as directing vehicles exiting the site. This will ensure that vehicle access and egress the site using the approved access route and if vehicles have used an incorrect route than additional communication will be provided to the supplier to ensure the approved route is used for any future deliveries.

Site Manoeuvring

It would be ensured that all vehicles, including HGVs and emergency vehicles, would have adequate space within the site to pull off the carriageway and manoeuvre within the site, thus preventing delay to passing traffic. There would be no queuing, parking, loading or unloading on the public highway adjacent to the site and vehicles would be able to drive into the site in a forward direction and turn and exit in a forward direction. In the interests of safety and to minimise disturbance from construction traffic, all construction drivers would be requested to travel at a maximum speed limit of 10 mph when travelling within the site.

² Health and Safety Executive website <http://www.hse.gov.uk/construction/safetytopics/vehicletrafficmanagement.htm>

Construction Compound

A construction compound would be situated within the site and would remain during the construction period. The compound would be of sufficient size to store materials and equipment for the construction until they are required and all delivery vehicles would be able to enter the site and unload within the compound area. The site will include a staff canteen and toilet facilities will be on site during construction.

Parking

Vehicle parking for staff and visitors during the construction phase would be accommodated on site and no vehicles associated with the construction would park on the highway network. This would be managed by the gates man. Construction staff parking would be within the site. The parking area would be located away from the work area and the turning area for HGVs. It is expected that staff would travel to site in cars and vans, although workers would be encouraged to car share in order to reduce the number of vehicle movements to site.

Construction Waste

Construction works are not anticipated to generate excess material. Where possible excavated material would be reused on site and any material surplus to requirements would be disposed of to a licenced facility.

Engagement

The contractor would engage with Vale of Glamorgan Council regarding the construction programme, vehicle movements and any traffic management measures necessary to accommodate the proposed construction traffic generations where necessary.

5.3 Environmental Mitigation

This section sets out the mitigation measures that would be considered in order to minimise any adverse effects of vehicular movements associated with the proposed development.

Vehicle Management

Fuel consumption would be minimised by encouraging the use of local materials and sub-contractors, where feasible, although it is recognised that there are specialist materials and equipment used in the construction and as such the potential for using local materials may be limited. All construction vehicles are required to comply with relevant European standards. Suppliers and drivers would be required to switch off their vehicle's engine when stationary to prevent exhaust emissions and all vehicles used by contractors must comply with MOT emission standards at all times.

Noise

Noise generated by construction would be temporary and would be controlled by limiting the hours of noise generating activities to minimise disruption for neighbouring properties. Contractors would be required to conform to the construction noise code of practice BS 5228.

Air Quality and Dust Management

It is not anticipated that any significant dust issues would arise during construction. If conditions on site are very dry then water misting/ spraying would be employed to dampen ground to avoid any dust nuisance.

The following measures relating to vehicles entering and leaving the site would be adopted to reduce the impact of dust such as easily cleaned hardstanding areas for vehicles, maintaining roads and hardstanding by regular brushing and water spraying, ensuring all vehicles carrying soil and other dusty materials are fully sheeted and enforcing a site speed limit of 10mph.

Road Cleanliness

The Site Manager would monitor the public highway conditions and would assess if further measures are required to maintain road cleanliness, such as road sweeping. By segregating the on-site traffic from the delivery vehicles, the potential for mud can be reduced. Adequate sheeting of vehicles carrying waste

materials may also be adopted to reduce the impact from mud. As and when necessary, vehicle wheels would be manually cleaned prior to release onto the public highway.

Local Environment Protection

The contractor would undertake mitigation measures to protect the local environment by including all marshalling areas and site offices within the site boundary, providing adequate storage space within the site for HGVs ensuring they are able to pull off the carriageway and do not block the site entrance and all loads to be properly stowed and secured.

Monitoring

The contractor would be responsible for monitoring the operation of the site during construction and ensuring mitigation measures are implemented effectively. Monitoring would be undertaken continuously, in order to ensure efficient operation and to ensure adverse impacts on the environment are avoided.

6 CONCLUSIONS

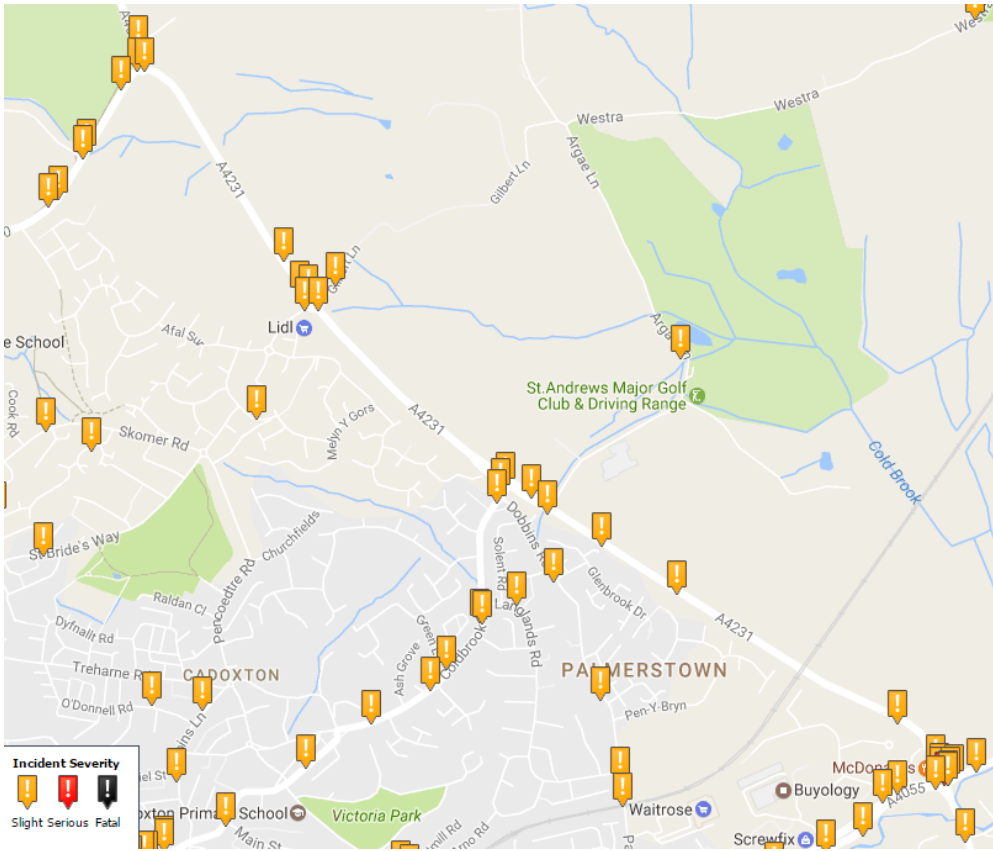
In conclusion, this Construction Traffic Management Plan identifies that the proposed construction traffic generated by the proposed development would result in a negligible to minor increase in traffic flows along highway links within the study area and as such this concludes that the proposed development is not anticipated to have any adverse effect on the local highway network with the delivery of the traffic management principles presented within this report.

Appendix A

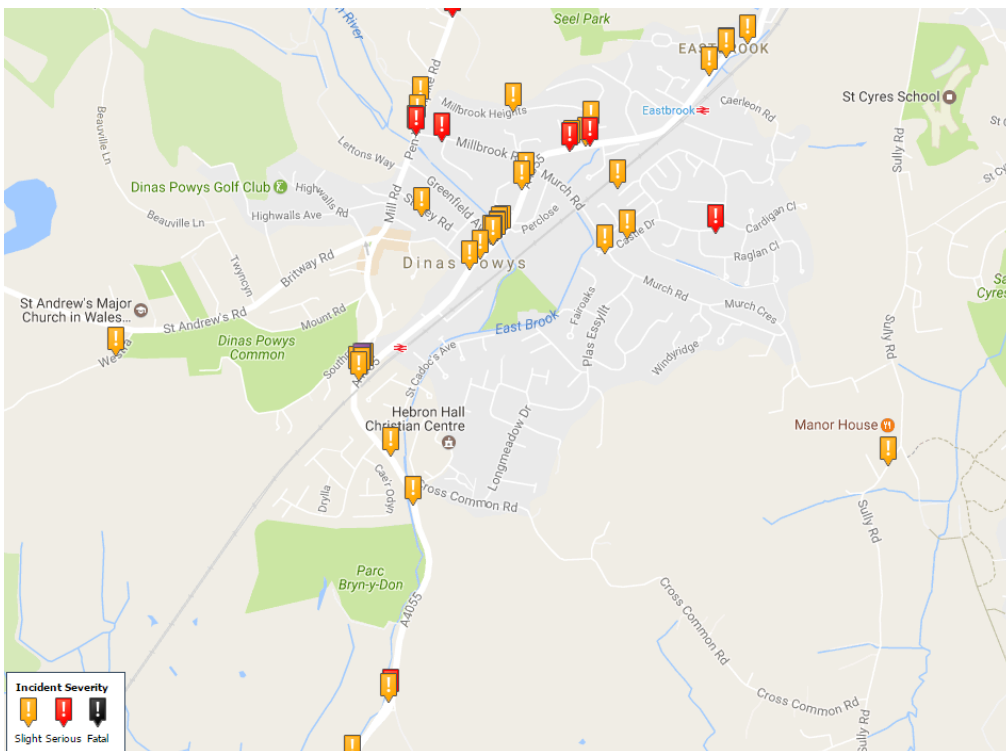
Map of Accidents within Local Highway Network

Cog Moors Wastewater Treatment Works - Transport Statement

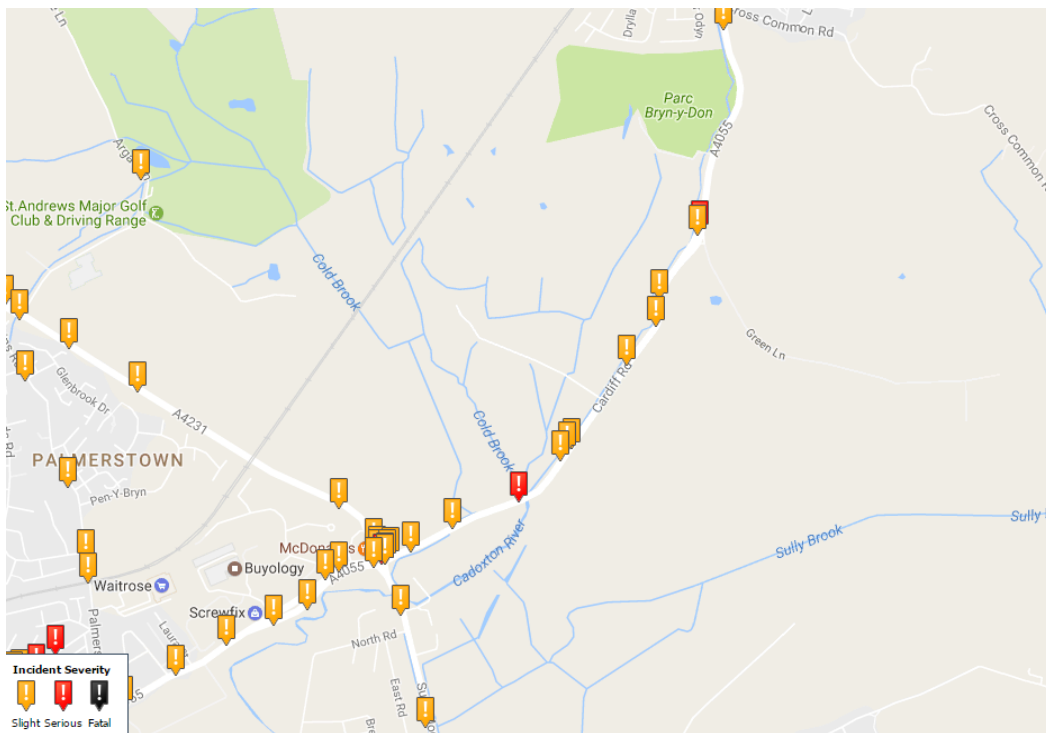
A4231



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