ARCADIS Design & Consultancy for natural and built assets

COG MOORS WWTW – PROPOSED ADVANCED ANAEROBIC DIGESTION PLANT

Transport Statement

NOVEMBER 2017

Incorporating

EC HARRIS BUILT ASSET CONSULTANCY

Hyder

CONTACTS

MATTHEW FRY
PRINCIPAL TRANSPORT PLANNER

dd 02920 926 886
m 07841 861627
e matthew.fry@arcadis.com

Arcadis Consulting (UK) Limited
Arcadis Cymru House
St Mellons Business Park
Fortran Road
Cardiff
CF3 0EY
United Kingdom

VERSION CONTROL

Version	Date	Authors	Description of Revision	Reviewed by
D01	June 2017	C. Collins E. Mitchell	First Issue	M. Fry
D02	July 2017	C. Collins E. Mitchell	Updated following LW review	M. Fry
D03	August 2017	C. Collins E. Mitchell	Updated following Caulmert Ltd review	M. Fry
D04	October 2017	C. Collins E. Mitchell	Inclusion of executive summary	M. Fry
D05	November 2017	C. Collins E. Mitchell	Inclusion of updated forecast operational trips	M. Fry

CONTENTS

IMAGES

TABLES

APPENDICES

APPENDIX A

Pre-Application Consultation Notes

APPENDIX B

Accident Maps

NON-TECHNICAL SUMMARY

Access to the new proposed Advanced Anaerobic Digestion (AAD) plant would continue to be from the A4055 via Green Lane. This access is already able to accommodate the largest vehicle type associated with existing and proposed operations, as well as vehicles which would visit the site during the construction phase.

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

During the construction phase the effects on traffic would be minor. A Construction Traffic Management Plan will set out how vehicle movements will be managed. This will include management of Heavy Goods Vehicles (HGVs) so that access will be from south of the A4055/ Green Lane junction.

Once operational, the new AAD plant will produce a reduced volume of sludge cake compared to a standard anaerobic digester. Vehicles used to import and remove sludge from the new plant will have a larger capacity and this will reduce traffic volumes. There would only be a minor increase in HGVs and overall operational movements would change from 23 two-way daily vehicle trips to 31 following completion of the proposed development, rising to 40 two-way vehicle trips ten years following completion of the scheme.

During operation haulage contractors and other users of the site will be advised that the preferred access route for HGVs will also be from the south of the A4055/ Green Lane junction.

EXECUTIVE SUMMARY

Arcadis Consulting (UK) Ltd ('Arcadis') have been commissioned by Dŵr Cymru Welsh Water to produce a Transport Statement in support of a planning application associated with the proposed development at the existing Cog Moors Wastewater Treatment Works site near Dinas Powys, in the Vale of Glamorgan. The development will predominantly comprise the erection of an Advanced Anaerobic Digestion plant to treat sewage sludge arising from wastewater treatment processes.

The Transport Statement has completed a review of national, regional and local policy and provided a robust analysis of the existing baseline conditions associated with the proposed development and the surrounding area. This has included an outline review of existing sustainable transport opportunities near to the proposed development, and acquisition and analysis of local accident and baseline traffic data for the adjacent local highway network.

The site access off the A4055 (Green Lane) is already able to accommodate the largest vehicle type associated with existing and future operations as well as the proposed construction phase, and therefore there are no proposals to amend the existing A4055/ Green Lane junction or the Green Lane access interconnecting into the Cog Moors WwTW.

The proposed development will retain suitable vehicle parking to accommodate all vehicle types associated with the proposed operational activities and construction phase. The utilisation of the existing and new proposed internal site access road and existing turning areas will ensure that all vehicles are able to arrive and egress from the site in forward gear. An overarching assessment of construction vehicle routes, hours of operation and programme has also been provided.

The Transport Statement has noted that there is no requirement for a Travel Plan to be provided to support the proposed planning application, and has indicated that the existing Cog Moors WwTW is extensively restricted for access by non-car means with no direct interconnectivity to pedestrian footways, cycle routes or public transport. Throughout the construction phase there will however be a commitment towards promoting car sharing as a viable option to reduce the potential for single occupancy vehicle trips.

The assessment has outlined existing and forecast two-way vehicle trips associated with the operational activities of the site, as well as the short-term construction phase. This has confirmed a very minor increase in operational movements from 23 two-way daily vehicle trips to 31 following completion of the proposed development (2019), rising to 40 two-way vehicle trips ten years following completion of the scheme (2029). The traffic impact assessment subsequently identified negligible increases in road traffic volumes on the A4055 and A4231 during the 2019 opening year and future 2029 design year, as well as only minor traffic impacts resulting from peak construction traffic during the 2019 peak period of construction.

During operation haulage contractors will be advised that the preferred access route for HGVs will be from the south of the A4055/ Green Lane junction. Once operational, the new AAD plant will also produce a reduced volume of sludge cake compared to a standard anaerobic digester. Vehicles used to import and remove sludge from the new plant will have a larger capacity and this will reduce traffic volumes.

The Transport Assessment concludes that the proposed development will not generate any significant residual transport related impacts on the local highway network and surrounding area for both operational and construction activities, supported by the implementation of integral design mitigation to facilitate transport related movements. It is therefore considered that the development proposals as described in this report are sustainable in terms of transport at this location.

1 INTRODUCTION

1.1 Background

Arcadis Consulting (UK) Ltd ('Arcadis') have been commissioned by Dŵr Cymru Welsh Water (DCWW) to produce a Transport Statement 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.

The purpose of this Transport Statement is to provide transportation analysis, to assess the proposed development impact and identify appropriate mitigation measures, where applicable. The report includes details of the proposed development, together with the site's accessibility by all modes of transport. An estimation of the forecast number of vehicle trips that could be generated by the proposed development once operational and during construction is provided, and the report assesses the net increase in traffic flows on the highway network surrounding the site accordingly.

1.2 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.

1.3 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.

1.4 Assessment Methodology

This Transport Statement is based on the findings of site audits, discussions with DCWW and Skanska, together with consideration of current guidance and policy. This Transport Statement has subsequently been prepared in accordance with the Department for Communities and Local Government (DCLG) Planning Practice Guidance on Travel plans, Transport Assessments and Statements in Decision Taking, and Technical Advice Note 18 (TAN 18): Transport (March 2007). An overview of the methodology that has been applied throughout this Transport Statement report includes:

- A review of site accessibility, together with a qualitative description of the site and the existing highway network;
- Establishing baseline traffic flows on the key routes to and from the proposed development;
- Estimation of the predicted traffic flows associated with the proposed development on future year traffic flows;
- Establishing the likely net and percentage impact of traffic on the highway links within the study area; and
- Analysis of personal injury accident (PIA) data in the vicinity of the site over the latest five-year period.

1.5 Transport Scoping and Consultation

Scoping discussions for this Transport Statement have been taken forward and agreed with Vale of Glamorgan Council throughout the course of the report's development, and which have included the issue of Traffic and Transport Pre-Application Consultation Notes (12/05/2017 and 09/06/2017) together with other correspondence confirming agreed methodologies, processes and calculations herewith contained as Appendix A.

1.6 Report Structure

Following on from this introductory chapter, the structure of this report is as follows:

- Section 2 policy and guidance framework sets out the national, regional and local policy relevant to the study area;
- Section 3 describes the highway network and provides an analysis of accident and traffic data;
- Section 4 outlines sustainable travel access to the site via walking, cycling and public transport;
- Section 5 provides an overview of the development proposals;
- Section 6 sets out the transport implementation strategy;
- Section 7 outlines the proposed traffic generation of the development;
- Section 8 assesses the transport implementation strategy; and
- Section 9 brings together earlier chapters of the report to provide an overall conclusion.

2 POLICY AND GUIDANCE FRAMEWORK

2.1 Introduction

A summary of the key policy framework considered within this assessment is summarised below.

2.2 National Policy

Planning Policy Wales; 9th Edition (November 2016)

Planning Policy Wales 9th Edition (PPW) (Welsh Government; 2016) sets out the land-use planning policies of the Welsh Government and is supplemented by a series of Technical Advice Notes (TANS). The Welsh Government advises that when determining a planning application for development that has transport implications, local authorities should take the following into account:

- The impacts of the proposed development on travel demand;
- The level and nature of public transport provision;
- Accessibility by a range of different transport modes;
- The opportunities to promote active travel journeys, and secure new and improved active travel routes and related facilities, in accordance with the provisions of the Active Travel (Wales) Act 2013;
- The willingness of a developer to promote travel by public transport, walking or cycling, or to provide infrastructure or measures to manage traffic, to overcome transport objections to the proposed development (payment for such measures will not, however, justify granting planning permission to a development for which it would not otherwise be granted);
- The environmental impact of both transport infrastructure and the traffic generated (with a particular emphasis on minimising the causes of climate change associated with transport); and
- The effects on the safety and convenience of other users of the transport network.

PPW advises that Transport Assessments are an important mechanism for setting out the scale of anticipated impacts a proposed development is likely to have. They assist in helping to anticipate the impacts of development so that they can be understood and catered for. PPW lists the categories of development that the Welsh Government expects to be accompanied by a Transport Assessment.

Technical Advice Note (TAN) 18: Transport (Welsh Government; 2007)

Technical Advice Note (TAN) 18: Transport (Welsh Government; 2007) describes how to integrate land use and transport planning and aims to achieve the Welsh Government sustainable transport policy objectives. It states that the integration of land use and transport planning can help Welsh Government achieve their environmental outcomes. The transport impacts of new development should be assessed and mitigated to achieve a more sustainable pattern of development. Paragraph 2.4 outlines:

'It is necessary to understand the interactions and linkages between land use and transport and devise integrated strategies.'

TAN 18 states that developers are required by local authorities to submit Transport Assessment's to accompanying planning applications for developments that are likely to result in significant trip generation.

Wales Transport Strategy (2008)

The *Wales Transport Strategy* (WTS) sets out the Welsh Government's main aims in improving transport. The goal is to promote sustainable transport networks that safeguard the environment while strengthening economic and social life. In order to achieve this, the strategy identifies a series of high-level outcomes and sets out the steps to their delivery. Within Chapter One of the WTS a series of sustainable transport themes are set out which state:

'New developments should, wherever possible, be located at sites already well served by walking, cycling and public transport links.'

The WTS addresses the current trends in transport by concentrating on the following themes:

- To achieve a more effective and efficient transport system;

- To achieve greater use of the more sustainable and healthy forms of travel; and
- To minimise the need to travel.

2.3 Regional Policy

South East Wales Transport Alliance (Sewta) Regional Transport Plan (2010)

The Regional Transport Plan (RTP) was jointly produced by the 10 South East Wales local authorities. The consortia was dissolved in March 2014, which marked the end of the RTP five-year transport delivery programme. The RTP was a statutory plan that set out an integrated and sustainable transport strategy for South East Wales and included:

- A strategic framework, setting out the issues, analysis, vision, aims, and policies;
- An implementation programme identifying actions, proposals and a five-year programme; and
- A monitoring and review mechanism.

The vision, policy aims and objectives of the RTP were utilised to inform the development of the Vale of Glamorgan Local Transport Plan (2015 – 2030) which are summarised as follows:

'A modern, accessible, integrated and sustainable transport system for South East Wales which increases opportunity, promotes prosperity for all and protects the environment; where walking, cycling, public transport, and sustainable freight provide real travel alternatives'.

2.4 Local Policy

Vale of Glamorgan Local Development Plan (adopted 2017)

The Vale of Glamorgan Local Development Plan (LDP) (2011- 2026) sets out the vision, objectives, strategy and policies for managing development in the Vale of Glamorgan, and contains a number of local planning policies and makes provision for the use of land for the purposes of housing, employment, retailing, recreation, transport, tourism, minerals, waste, and community uses. It also seeks to identify the infrastructure that will be required to meet the growth anticipated in the Vale of Glamorgan up to 2026.

Vale of Glamorgan Local Transport Plan

The Vale of Glamorgan Local Transport Plan (LTP) has been established to recognise the diverse economic and social geography, and overlapping labour and housing markets, that exist throughout the Capital Region (encompassing Cardiff, Blaenau Gwent, Bridgend, Caerphilly, Merthyr Tydfil, Monmouthshire, Newport, Rhondda Cynon Taf, Torfaen and the Vale of Glamorgan).

Whilst acknowledging the requirement for a collaborative approach for the future development of the Capital Region, the LTP seeks to identify the sustainable transport measures required to ensure the Vale of Glamorgan Council adheres to current requirements and good practices to allow for a sustainable transport environment for the period 2015 to 2020, as well as looking forward to 2030. The plan therefore seeks to secure better conditions for pedestrians, cyclists and public transport users and to encourage a modal shift away from the single occupancy car. The LTP also *'seeks to tackle traffic congestion by securing improvements to the strategic highway corridors for commuters who may need to travel by car'.*

2.5 Summary

This Transport Statement has been prepared in accordance with both national and local guidance, which are outlined above. The methodology of the Transport Statement has also been prepared in accordance with comments received from Vale of Glamorgan during the pre-application scoping exercise, as set out in Appendix A.

3 HIGHWAYS AND TRAFFIC

3.1 Introduction

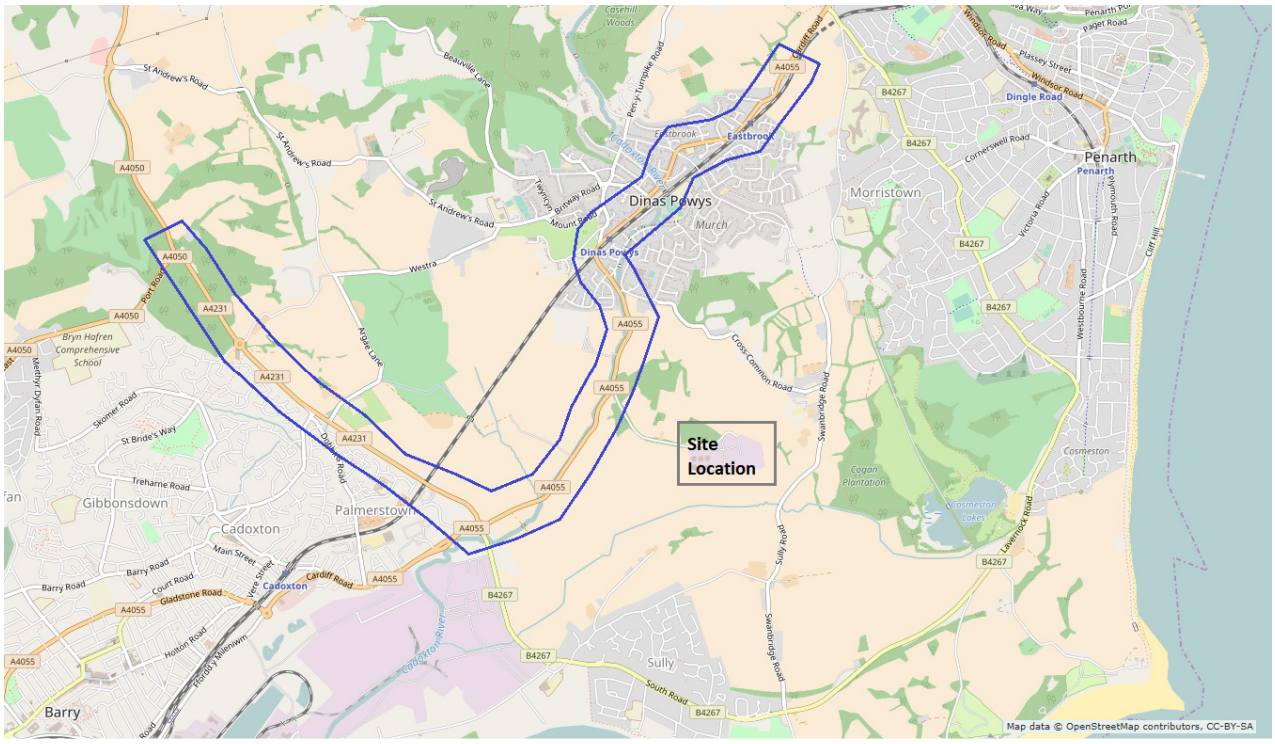
This section focuses on the baseline conditions in the area surrounding the proposed development site. This work has been undertaken through a site visit, audit work in the area and desk-based analysis.

3.2 Study Area

A study area surrounding the existing WwTW has been defined for the purpose of the traffic analysis and is as shown in Image 1. The study area identifies highway links within the vicinity of the proposed development and have subsequently been split into sections as follows:

- Section 1 – Green Lane from A4055 Cardiff Road to Site Entrance;
- Section 2 – A4055 Cardiff Road through Dinas Powys;
- Section 3 – A4055 Cardiff Road from Dinas Powys to the A4055/ A4321 Roundabout; and
- Section 4 – A4231 Barry Docks Link Road from A4055 to A4050 Port Road.

Image 1 Study Area



3.3 Highway Network and Junctions

A summary of each of the highway links within the study area is described below.

Section 1 – Green Lane from A4055 Cardiff Road to Site Entrance

The A4055/ Green Lane junction is situated south of Dinas Powys, approximately 670m south of the A4055/ Cross Common Road junction. The A4055/ Green Lane junction provides access to Cog Moors WwTW via Green Lane which is under private ownership only allowing access for authorised vehicles including those accessing the existing DCWW 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 present along its entirety (see Photograph 1).

The A4055/ Green Lane junction provides separated one-way access entering and existing the junction. 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.

Photograph 1: Green Lane

Section 2 – A4055 Cardiff Road through Dinas Powys

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.

Section 3 – A4055 Cardiff Road from Dinas Powys to the A4055/ A4231/ B4267 Roundabout

Section 3 comprises the A4055 Cardiff Road south of Dinas Powys to the A4055/ A4231/ B4267 roundabout and provides interconnecting access to the Cog Moors WwTW via Green Lane. The rural route is a single carriageway, predominantly subject to the national speed limit which reduces to a 30mph on approach to Dinas Powys. There is a footway located along one side of the carriageway on the approach to Dinas Powys, however the majority of this section does not have any dedicated/ segregated provision.

Section 4 – A4231 Barry Docks Link Road from A4055 to A4050 Port Road

The route extends from the A4055/ A4231 roundabout in the south to the A4050 Port Road roundabout in the north. 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. Photograph 2 shows A4231 looking from the A4055/ A4231 roundabout in a northerly direction and Photograph 3 shows A4050 Port Road roundabout from the A4231 travelling northbound.

Photograph 2: A4231 Northbound

Photograph 3: A4050 Port Road Roundabout

3.4 Accident Data

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

Table 1 Recorded Collisions by Seveirty (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 B.

3.5 Baseline Traffic Flows

Traffic flows are available from the Department for Transport (DfT) Count Point Data[2] database. The latest available Annual Average Daily Flow (AADF) data for 2016 on the A4055 and A4231 is summarised in Table 2 for both total traffic and HGV flows. It can be seen that existing HGV flows are relatively low as a percentage throughout the highway assessed.

[1] http://www.crashmap.co.uk/Search
[2] http://www.dft.gov.uk/traffic-counts/

Table 2 Base Year 2016 AADF

Road Link	Location	Count Point ID	2016 AADF	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%

4 SUSTAINABLE TRAVEL ACCESS

4.1 Introduction

This section explores the existing walking, cycling and public transport accessibility of the proposed site.

4.2 Walking and Cycling Connections

At the gated entrance onto Green Lane there are no footways provided along the A4050 Cardiff Road in either direction. The nearest footway is located approximately 90m north of Green Lane along the eastern extent of the carriageway connecting with Dinas Powys. The footways throughout Dinas Powys to the north of the site are predominantly well lit and of a good width and surface quality.

The closest footways are located at the A4055/ A4231 junction approximately 1.2km to the south of the A4055/ Green Lane junction, and which does retain some informal dropped kerb pedestrian crossings. The site audit identified that there is minimal cycle infrastructure within the vicinity of the site. National Cycle Network (NCN) route 88 is located within approximately 2.3km (east) of the site. NCN route 88 is a proposed coastal route between Newport, Cardiff, and Bridgend comprising a combination of on-road and traffic-free routes.

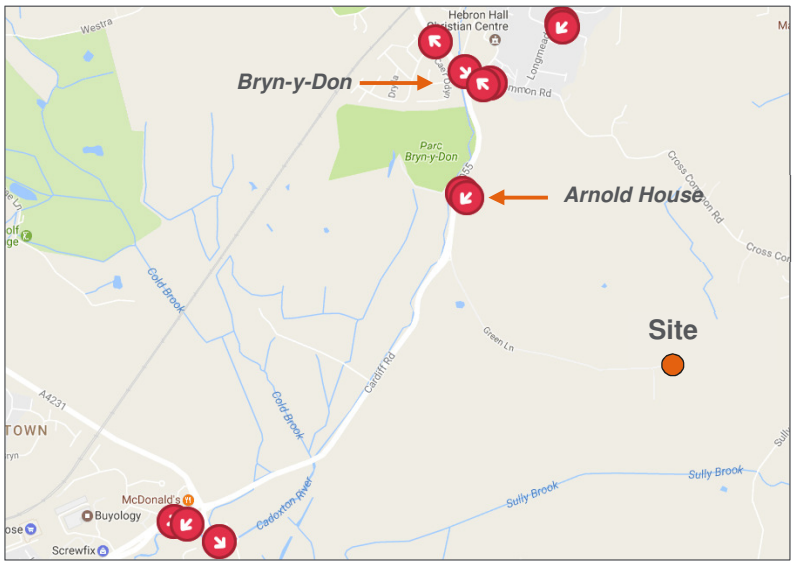
4.3 Public Transport Accessibility

Bus Network

Image 2 presents the location of bus stops within the vicinity of the proposed site. The nearest bus stops are the Arnold House northbound and southbound bus stops, located approximately 240m north of the A4055/ Green Lane junction. These bus stops both comprise a flagged pole and timetable information. An informal pedestrian crossing comprising dropped kerbing and tactile paving is located approximately 40m north of the northbound bus stop.

The Arnold House north bus stop is shown in Photograph 4 and the A4055/ Cardiff Road highway is shown in Photograph 5. There is no dropped kerbing or tactile paving on the footway or the island approximately 10m south of the southbound stop. It should be noted that the existing pedestrian footway on the eastern side of the carriageway comes to an end at the property situated approximately 70m north of the Green Lane junction. Other bus stops include the Bryn-y-don southbound bus stop, located approximately 700m north of the site access. The bus stop comprises a flagged shelter with seating and designated bus-box markings have been provided within the highway.

Image 2 Local Bus Stop Locations[3]



[3] https://www.traveline.cymru/bus-stop-finder/

Photograph 4: Arnold House Northbound stop

Photograph 5: A4055/ Cardiff Road looking south from Northbound Bus Stop

Table 3 provides a summary of existing bus services that are accessible from these bus stops. The table includes information on bus services, frequency and the direction of travel.

Table 3 Summary of Local Bus Services

Bus Number	Route	Bus Stop	Service Frequency (One-way)		
			Monday-Friday	Saturday	Sunday
93	Morrisons - Cardiff	Arnold House	1 per hour	1 per hour	-
95	Winston Square – Heath Park Way	Arnold House	2 per hour	2 per hour	1 every 2 hours
304	Cardiff - Bridgend	Arnold House (south-bound only)	2 per hour	2 per hour	1 every 2 hours
S77	Barry – Vale View Crescent (College bus)	Arnold House	1 per day (only runs on Monday)	-	-
89a	Nat West Bank – Cardiff	Bryn-y-don	1 every 2 hours	1 every 2 hours	-

Rail Services

The closest railway stations is Dinas Powys (Dinas Powys and Eastbrook) circa 1.2km to the north of the site access. Table 4 summarises the direct services and frequencies available from the stations.

Table 4 Summary of Rail Services from Dinas Powys and Eastbrook Stations[4]

Destination	Approximate Journey Time	Approximate Frequency	
		Peak Hour	Off-Peak
Bridgend	46 minutes	1	1 per hour
Cardiff Central	14 minutes	4	4 per hour
Pontypridd	46 minutes	4	4 per hour
Rhoose (Cardiff International Airport)	19 minutes	1	1 per hour

[4] National Rail - http://www.nationalrail.co.uk/

5 THE PROPOSED DEVELOPMENT

5.1 Introduction

This section provides a description of the proposed development together with a description of the site access arrangements.

5.2 Development Proposals

The proposed AAD plant comprises a number of new process and storage tanks and buildings, together with the demolition of and modifications to some existing items of plant and equipment.

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

The proposed development will provide for:

- Additional digestion capacity;
- Conditioning of the sludge generated on the site (dewatering and removal of contaminating rags and plastic);
- Reception facilities for sludge imported to the site from satellite WwTWs;
- Blending of the indigenous sludge and imported sludge;
- A thermal hydrolysis plant which uses steam to increase the temperature and pressure in a reaction vessel to pre-treat the sludge;
- Boilers to generate the steam for thermal hydrolysis;
- A siloxane plant to remove contaminants from the biogas generated;
- A combined heat and power plant to generate useable heat and electricity, which can be used on site, exported to the grid, or both.
- A UV plant to treat some of the final effluent water from the WwTW, to provide better quality process water, for the sludge downstream of thermal hydrolysis;
- Tanks to hold sludge and liquor, resulting from the thickening and dewatering processes;
- A cake storage silo;
- Odour control equipment;
- New internal site access roads and drainage;
- Site clearance and earthworks and new fencing;
- New MCC equipment and control kiosks;
- Appropriate mitigation planting and ecological mitigation measures; and
- An upgrade to the electricity connection.

The proposed development will not involve the use of any hazardous substances in notifiable quantities. 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.

5.3 Site Access

The access off the A4055 is already able to accommodate the largest vehicle type associated with existing and future operations, as well as for development proposals associated with the construction phase. There are therefore no proposals to amend the existing A4055/ Green Lane junction or the Green Lane carriageway interconnecting into the Cog Moors WwTW.

6 TRANSPORT IMPLEMENTATION STRATEGY

6.1 Introduction

This chapter comprises a Transport Implementation Strategy for the proposed development and construction phases. In line with the guidance in TAN 18, it includes a review of the proposed movement and access strategy encompassing operational access and vehicles, parking, servicing and deliveries. In addition, a review of the construction phase has been presented which also includes programme, vehicle routing and proposed mitigation to alleviate the potential for any adverse impacts.

6.2 Operational

Site Access and Vehicles

Vehicle access to the proposed development will continue to be gained via the A4055 and Green Lane. The size of HGVs associated with the operation of the proposed development and interconnecting to the proposed development site via Green Lane will not be greater than those vehicles already gaining access to/ from the A4055.

The type of vehicles already gaining access to the Cog Moors WwTW include:

- Cars and light vans;
- Buses/ coaches (associated with education centre based in the WwTW); and
- 44 tonne articulated trucks/ tankers.

A new internal site access road and dedicated delivery and hardstanding areas will be constructed within the site to accommodate the new proposed operational activities. The new internal access road will operate as a one-way system through the site with advisory and directional signage provided accordingly and be of suitable construction to accommodate 44 tonne articulated trucks/ tankers.

Vehicle Parking

All requirements for operational parking will be retained within the curtilage of the existing site, including the provision of suitable turning areas (in addition to the proposed one-way internal access route) to ensure that all vehicles are able to arrive and egress from the site in forward gear.

Deliveries and Servicing

Delivery and servicing vehicle movements have been accounted for when forecasting operational traffic. All (forecasted) two-way operational vehicle trips for the proposed development are presented in Table 6 whereby only minor operational traffic increases are observed. Delivery and servicing vehicles will access the site via the A4055 and Green Lane and utilise the new one-way access road within the site.

6.3 Construction

The following section has been considered to outline the key construction elements that specifically impact upon traffic and transport within the vicinity of the Cog Moors WwTW, and to ensure a robust strategy is in place to accommodate construction proposals throughout the adjacent highway network.

Site Access and Vehicles

Vehicle access to the proposed development will be gained via the A4055 and Green Lane. During the construction phase there will be vehicle movements to the site associated with the delivery of construction components and materials, together with the arrival and departure of construction staff. The proposed vehicles for construction are as follows:

- Mobile crane;
- 44 tonne articulated trucks/ tankers;
- Fixed wheel 7.5 tonne tankers;
- 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.

Vehicle Parking

All car parking associated with construction traffic will be retained within the Cog Moors WwTW, to the west of the main site buildings. To accommodate the forecast number of construction worker trips at least 50 car parking spaces will be provided as part of the construction compound and retained within the curtilage of the proposed application boundary. Parking for at least six construction HGVs and light vans will also be retained on site.

Construction vehicles will utilise the new access road, routing in an anti-clockwise direction through the site as part of a one-way system. Existing turning areas for the largest vehicle type accessing the proposed development (44 tonne articulated lorries) will be utilised ensuring that all vehicles can arrive and egress from the proposed development in forward gear. There will be no requirement for any construction vehicles to park on the adopted local highway network.

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.

Extended hours may be required for mechanical and electrical 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 and 09:00, and 16:30 and 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.

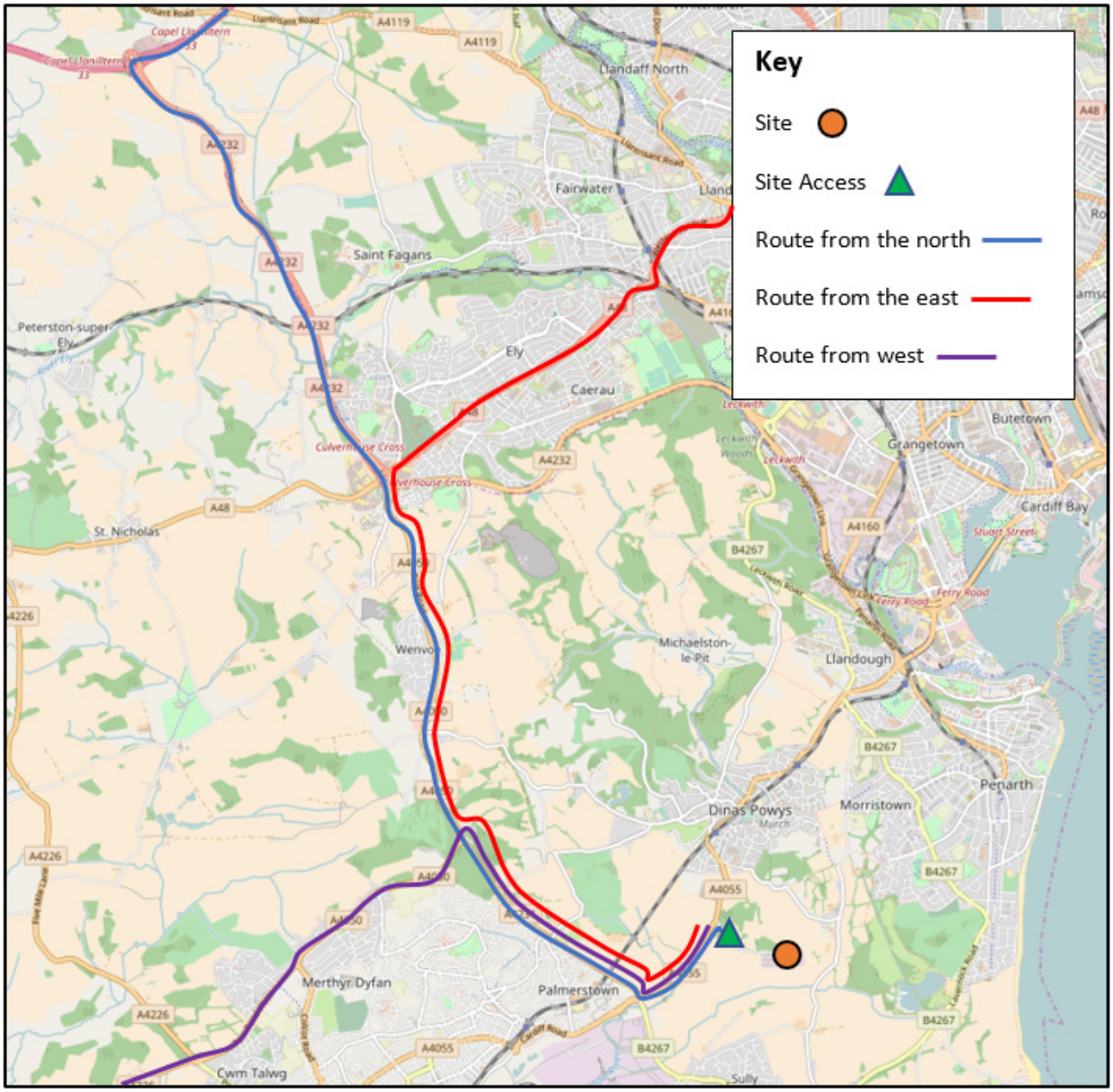
Vehicle Routing

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. For access via the M4 motorway to the north, this will establish a route via the A4232/ A4050/ A4231/ A4055.

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 Image 3.

Image 3 Indicative Construction HGV Regional Route Plan



Construction Traffic Management

In addition to the key construction elements noted herewith, any proposals for a full CTMP to be produced prior to the commencement of works on site are anticipated to encompass (but not be limited to) the following key mitigation measures.

- Traffic Management Principles
  - Site design and management;
  - Site manoeuvring;
  - Highway signage;
  - Condition surveys;
  - Temporary traffic restrictions;
  - Construction compound and waste;
  - Procurement strategy; and
  - Engagement with Vale of Glamorgan Highways Department (where applicable).

- Environmental Measures
  - Vehicle management;
  - Noise;
  - Air quality and dust management;
  - Road cleanliness;
  - Local environmental protection; and
  - Monitoring.

6.4 Sustainable Travel

Following consultation and scoping 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, cycle routes or public transport.

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. 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 off-site 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.

7 Traffic Generation

7.1 Overview

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

7.2 Existing Operational Traffic

The number of two-way operational vehicle trips associated with existing operations at the Cog Moors WwTW has been outlined within Table 5. 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 5 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**

7.3 Forecast Operational Traffic

The number of two-way operational vehicle trips following development completion for the forecast 2019 opening year and 2029 design year is outlined in Table 6. There are a total of 31 two-way vehicle trips forecast (62 one-way trips) in 2019, indicating a net increase of just 16 one-way daily trips based against existing operational movements. There are a total of 40 two-way vehicle trips forecast (80 one-way trips) in 2029, indicating a net increase of 34 one-way daily trips based against existing operational movements. It should be noted that the forecast daily trips for the 2029 scenario set out the anticipated worst-case operational development trips up until the design horizon year of 2041.

Table 6 Forecast (2019 & 2029) Two-way Daily Operational Vehicle Trips at the Cog Moors WwTW

Vehicle Type	Number of Two-way Daily Trips (2019)	Number of Two-way Daily Trips (2029)
HGV – Sludge Import	7	14
HGV – Sludge Cake Export	4	6
HGV – Deliveries	3	3
Cars – Operators	8	8
Light Vans – Maintenance	8	8
Bus – Education Centre	1	1
Total	**31**	**40**

During operation haulage contractors will be advised that the preferred access route for HGVs will be from the south of the A4055/ Green Lane junction. Once operational, the new AAD plant will also produce a reduced volume of sludge cake compared to a standard anaerobic digester. Vehicles used to import and remove sludge from the new plant will have a larger capacity and this will reduce traffic volumes.

7.4 Construction Traffic

The 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 7.

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 however be encouraged to car share to achieve more sustainable travel to and from the site throughout the construction phase.

Table 7 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 8 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 8 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**

8 TRANSPORT IMPLEMENTATION STRATEGY ASSESSMENT

8.1 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 operational and construction vehicle distribution of the development to identify 'worst case scenario' traffic flows.

8.2 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 6.3. In addition, analysis of the proposed opening year (2019) and future design year 10 years following scheme opening (2029) will also be assessed.

8.3 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 (Chapter 3). Table 9 summarises the base year 2019 AADF.

A growth rate of 1.1394 has been applied to the 2016 count data to calculate the 2029 future baseline design year, as summarised in Table 10.

A road classification of urban/ principal has been applied to both the A4055 and A4231.

Table 9 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%

Table 10 Design Year 2029 Baseline AADF

Road Link	Location	Count Point ID	2029 Baseline AADF	HGVs	% HGVs
A4055	Near A4055/ Green Lane junction	10630	20,782	422	2.03%
A4231	North of A4231/ A4055 Junction	99962	19,622	836	4.26%

8.4 Operational Impact Assessment

Table 11 and Table 12 summarise the percentage net increase in the AADF traffic flows with the addition of the opening year (2019) and future design year (2029) operational vehicle movements. It has been assumed that all existing operational trips are captured within the baseline AADF data, and therefore the net one-way daily increase of 16 trips for the 2019 scenario and 34 trips for the 2029 scenario has been assessed.

The tables subsequently indicate that there is a minor increase in traffic flows following the completion of the development during the forecast 2019 opening year and 2029 design year. As such, it is considered that the operational traffic of the proposed development will have a negligible impact on the surrounding highway network following scheme completion.

Table 11 Percentage Net Increase in Operational 2019 AADF Post Scheme Completion

Road Link	Location	Count Point ID	2019 Baseline AADF	2019 Baseline + Development AADF	% Net Increase Operational Flows
A4055	Near A4055/ Green Lane junction	10630	18,996	19,012	0.084%
A4231	North of A4231/ A4055 Junction	99962	17,936	17,952	0.089%

Table 12 Percentage Net Increase in Operational 2029 AADF Post Scheme Completion

Road Link	Location	Count Point ID	2029 Baseline AADF	2029 Baseline AADF + Development	% Net Increase Operational Flows
A4055	Near A4055/ Green Lane junction	10630	20,782	20,816	0.164%
A4231	North of A4231/ A4055 Junction	99962	19,622	19,656	0.173%

8.5 Construction Impact Assessment

All construction trips have been assigned to the highway network via the A4055 and A4231 accordingly, and as detailed in Chapter 6. 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 13 and Table 14 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.

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.

Table 13 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%

Table 14 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%

9 SUMMARY AND CONCLUSIONS

This Transport Statement has been produced in support of a planning application associated with the proposed development of an AAD plant situated at the existing Cog Moors WwTW site near Dinas Powys, in the Vale of Glamorgan.

The Transport Statement has completed a review of national, regional and local policy and provided a robust analysis of the existing baseline conditions associated with the proposed development and the surrounding area. This has included an outline review of existing sustainable transport opportunities near to the proposed development, and acquisition and analysis of local accident and baseline traffic data for the adjacent local highway network.

The site access off the A4055 (Green Lane) is already able to accommodate the largest vehicle type associated with existing and future operations as well as the proposed construction phase, and therefore there are no proposals to amend the existing A4055/ Green Lane junction or the Green Lane access interconnecting into the Cog Moors WwTW.

The proposed development will retain suitable vehicle parking to accommodate all vehicle types associated with the proposed operational activities and construction phase. The utilisation of the existing and new proposed internal site access road and existing turning areas will ensure that all vehicles are able to arrive and egress from the site in forward gear. An overarching assessment of construction vehicle routes, hours of operation and programme has also been provided.

The Transport Statement has noted that there is no requirement for a Travel Plan to be provided to support the proposed planning application, and has indicated that the existing Cog Moors WwTW is extensively restricted for access by non-car means with no direct interconnectivity to pedestrian footways, cycle routes or public transport. Throughout the construction phase there will however be a commitment towards promoting car sharing as a viable option to reduce the potential for single occupancy vehicle trips.

The assessment has outlined existing and forecast two-way vehicle trips associated with the operational activities of the site as well as the short-term construction phase. This has confirmed a very minor increase in operational movements from 23 two-way daily vehicle trips to 31 following completion of the proposed development (2019), rising to 40 two-way vehicle trips ten years following completion of the scheme (2029). The impact assessment has subsequently forecast a negligible net traffic increase of just 0.084% and 0.089% on the A4055 and A4231 respectively during the 2019 opening year with the development in-situ, and increases of just 0.164% and 0.173% during the 2029 design year for the same scenario.

The peak additional daily vehicle movements during construction will be 69 two-way daily trips (138 total one-way trips) with the average construction day forecast to generate 41 two-way daily trips (82 total one-way trips). Again, only minor traffic impacts are forecast with net traffic increases of 0.73% and 0.77% on the A4055 and A4231 respectively during the 2019 peak period of construction, and increases of 0.43% and 0.46% during the 2019 average period of construction.

During operation haulage contractors will be advised that the preferred access route for HGVs will be from the south of the A4055/ Green Lane junction. Once operational, the new AAD plant will also produce a reduced volume of sludge cake compared to a standard anaerobic digester. Vehicles used to import and remove sludge from the new plant will have a larger capacity and this will reduce traffic volumes.

The Transport Statement concludes that the proposed development will generate no significant residual transport related impacts on the local highway network and surrounding area for both operational and construction activities, supported by the implementation of integral design mitigation to facilitate transport related movements. It is therefore considered that the development proposals as described in this report are sustainable in terms of transport at this location.

APPENDIX A

Pre-Application Consultation Notes

MEMO

ARCADIS Design & Consultancy for natural and built assets

SUBJECT
COG MOORS WwTW – PROPOSED ADVANCED ANAEROBIC DIGESTION (AAD) PLANT
TRAFFIC & TRANSPORT PRE-APPLICATION CONSULTATION NOTE

DATE
12th May 2017

COPIES TO
VALE OF GLAMORGAN COUNCIL HIGHWAY DEVELOPMENT TEAM
VALE OF GLAMORGAN PLANNING DEPARTMENT – SIMON BUTLER

FROM
MATTHEW FRY – PRINCIPAL TRANSPORT PLANNER
ARCADIS, ARCADIS CYMRU HOUSE, FORTRAN ROAD, ST MELLONS BUSINESS PARK, CARDIFF, CF3 0EY
matthew.fry@arcadis.com
T. 02920 926886 | M. 07841 861627

Traffic and Transport (Transport Statement)

1 Introduction

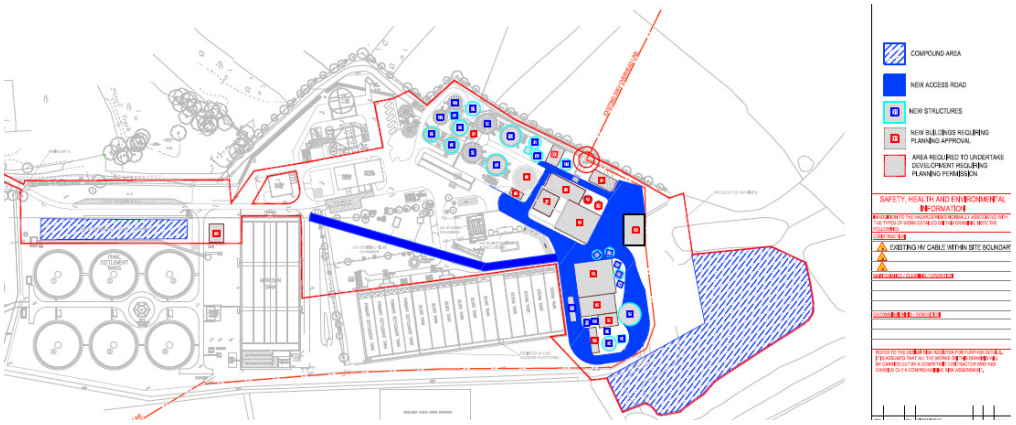
Background

This pre-application consultation note sets out a proposed approach and methodology for preparing a Transport Statement on behalf of Dwr Cymru Welsh Water (DCWW) to support 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. This consultation note broadly follows the format of the proposed Transport Statement which draws on the Department for Transport (DfT) guidance on Transport Assessment as good practice, as well as the Welsh Government Technical Advice Note (TAN) 18: Transport (2007). The Transport Statement will assess both the temporary construction and operational impacts of the development.

Proposed Development

DCWW is proposing to construct 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 process and storage tanks and buildings, together with the demolition of and modifications to some existing items of plant and equipment. The proposed layout is shown as Figure 1.

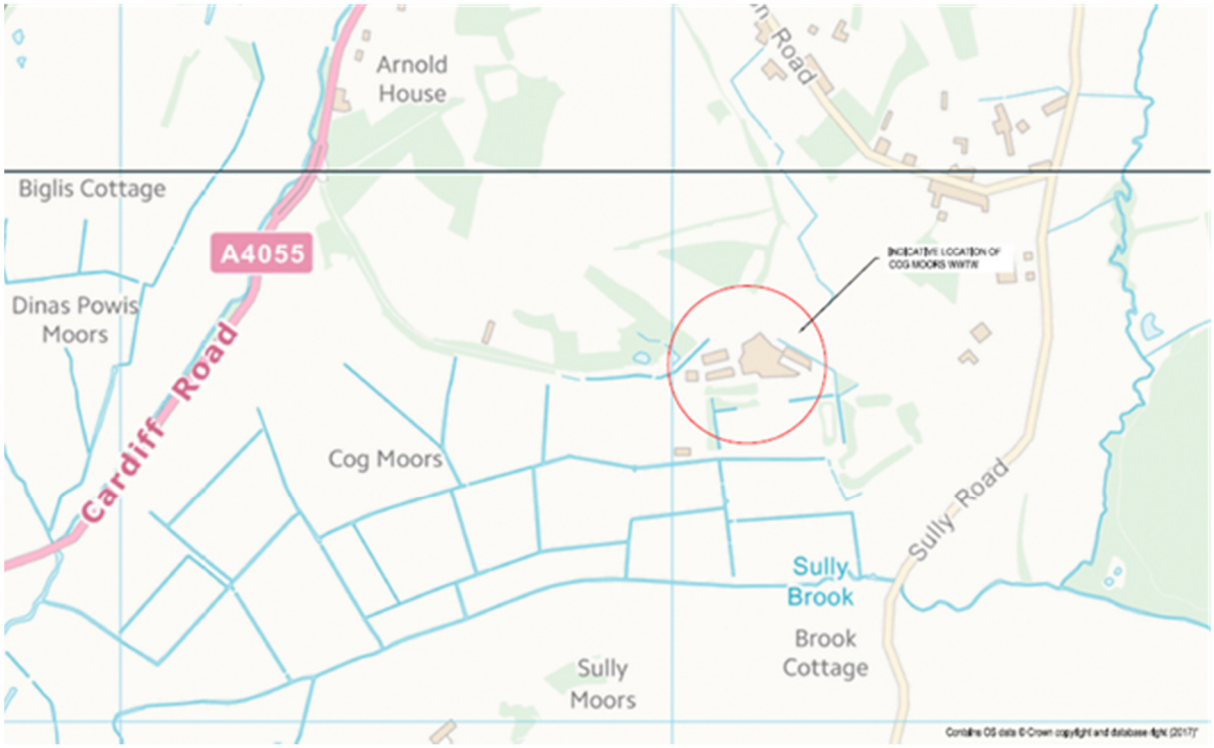
Figure 1 Proposed Development Site Layout



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. Vehicular and pedestrian 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.

Figure 2 Development Site Location Plan



Transport Statement Structure

We propose that the Transport Statement will include the following chapters:

- Introduction
- Policy and Guidance Framework
- Highways and Traffic
- Sustainable Travel Access
- Development Proposals
- Transport Implementation Strategy
- Trip Generation
- Assessment of Transport Implementation Strategy
- Summary and Conclusions

2 Policy and Guidance Framework

A policy and guidance review will be provided including national and local policy in relation to the development. Documents proposed to be included in the review are as follows:

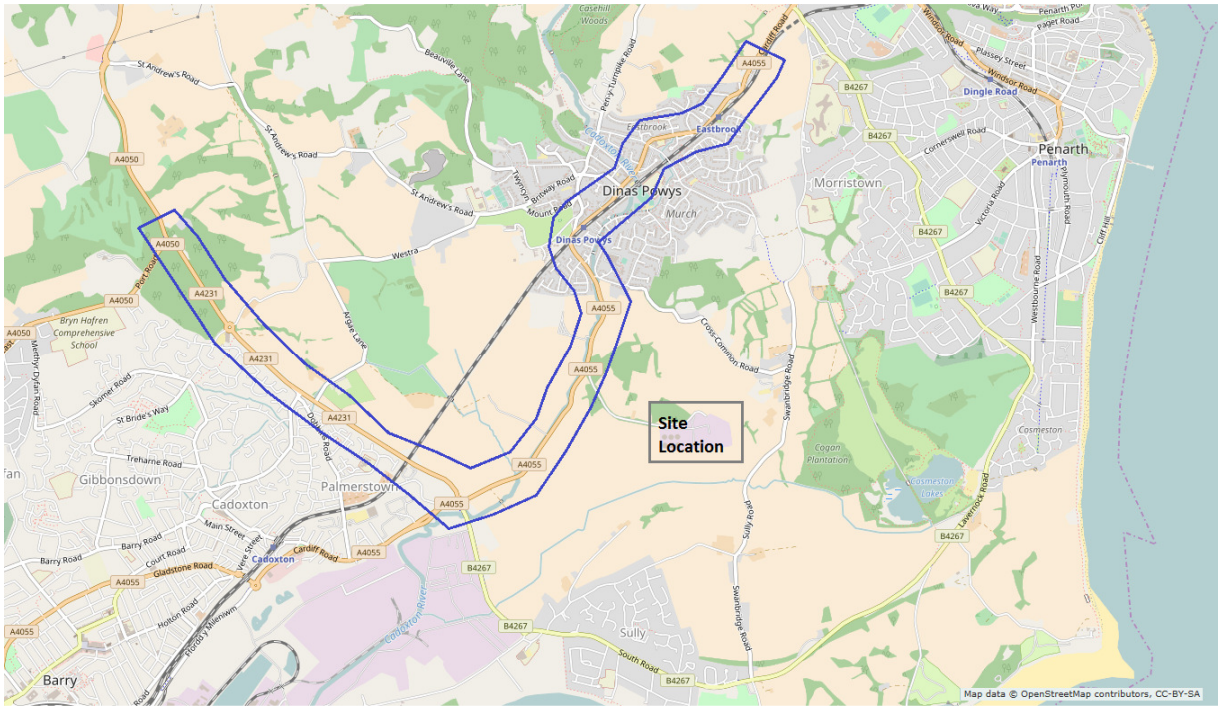
- Welsh Government Wales Transport Strategy (2008)
- Welsh Government Planning Policy Wales; Technical Advice Note (TAN) 18: Transport (2007)
- Welsh Government Planning Policy Wales (Edition 9 July 2016)
- Welsh Government National Transport Plan (Wales) (March 2010)
- Vale of Glamorgan Local Transport Plan (2015 – 2030)
- Vale of Glamorgan Adopted Unitary Development Plan (1996-2011)

3 Highways & Traffic

Study Area

It is proposed that the Highways and Traffic section of the Transport Statement will principally focus on the area defined within Figure 3.

Figure 3 Proposed Study Area



Highway Network and Junctions

A robust site visit will be completed to identify and assess the highway within the proposed study area, principally the A4055 and A4231. The baseline conditions will subsequently encompass a description of the highway network including the characteristics of these key links and junctions.

Accident Data

Personal Injury Accident (PIA) data for the most recent five year period within the study area will be obtained from Vale of Glamorgan Council and analysed. This will provide an overview of any existing road safety issues near to and on route to the proposed development.

Baseline Traffic Flows

In response to the request for a Screening Opinion, the Vale of Glamorgan Highways Development team consultation response noted the following (*2017/00162/SC1; received on 15 February 2017*):

- *Further to reviewing the details submitted in relation to the above, I would suggest that the increased traffic flow as a result of the development would not have a material impact along the adjacent highway network. However, when a formal planning application is submitted, evidence of the predicted traffic flow should be provided, alongside how this would be controlled as not to be increased above that stated.*

Given the negligible material impact anticipated on the adjacent highway network, it is not proposed that new traffic counts will be sought for the Transport Statement. Subsequently, to inform the basis for assessing the peak construction year impact on the local highway network, existing traffic data along the A4055 and A4231 will be sought from Vale of Glamorgan Council to determine the existing total vehicle and HGV traffic flows over an average day period (12hr flows 07:00-19:00) to encompass typical construction and operational working hours (to be confirmed by DCWW).

4 Sustainable Travel Access

As part of the site visit to assess baseline conditions, an overview of sustainable travel accessibility near to the site will be identified encompassing:

- Walking and cycling connections; and
- The existing bus and rail services that can be accessed within the vicinity of the site, together with a plan showing the accessibility of public transport services.

5 Development Proposals

The Transport Statement will include full details of the proposed development, including proposed hours of operation.

6 Transport Implementation Strategy

This chapter will comprise a Transport Implementation Strategy (TIS) for the development, in line with the guidance in TAN 18. The TIS will set out the objectives for the development and the associated measures proposed to achieve those objectives encompassing movement and access, parking provision, sustainable travel, deliveries/ servicing and construction.

Vehicle Access

In response to the request for a Screening Opinion, the Vale of Glamorgan Highways Development team consultation response noted the following relating to junction access was (*2017/00162/SC1; received on 15 February 2017*):

- *In terms of the access, it is noted that the [Green Lane] junction with A4055 is adequate to cater for the increase in traffic. Furthermore, despite the single width access road within the site, there are a number of passing places provided that will allow vehicle to pass side by side which is acceptable, subject to the above.*

The Transport Statement will confirm that vehicle access to the proposed development will continue to be gained from the A4055 via Green Lane. It is currently assumed that the size of HGV's associated with the operation of the proposed development will not be greater than those vehicles already gaining access to/ from the A4055, and subsequently interconnecting to the proposed development site via Green Lane. The type of vehicles required to gain access to the site will subsequently be confirmed, and where applicable, swept path analysis at the A4055/ Green Lane junction will be completed for any operational vehicles anticipated to be greater in size to those already gaining access to the site. It should be noted that delivery vehicles for either construction materials or future operations are unlikely to be larger than vehicles currently accessing the site.

Sustainable Travel

In response to the request for a Screening Opinion the Vale of Glamorgan Highways Development team consultation response (*2017/00162/SC1; received on 15 February 2017*) noted that there is no requirement to provide a Travel Plan to support the development, however sustainable travel opportunities will form part of the strategic TIS review within the Transport Statement.

Construction

The TIS will focus on construction traffic impacts associated with the proposed development including the site access, hours of operation, programme, and the anticipated vehicle routing (to be confirmed in liaison with Vale of Glamorgan Council). The type of construction vehicles required to gain access to the site will be confirmed and, where applicable, swept path analysis at the A4055/ Green Lane junction will be completed for any vehicles anticipated to be greater in size to those already gaining access to the site. The Transport Statement will highlight key measures that could be adopted to mitigate the impact of the development's construction, however it is noted that there is no requirement to produce a full and separate Construction Traffic Management Plan to support the planning application at this stage.

7 Trip Generation and Assignment

This section will detail traffic generation by vehicle type during the construction and operational phases of the development. All vehicle movements subsequently associated with construction, as well as the existing and proposed operations at Cog Moors WwTW will be clearly provided within the Transport Statement. Vehicle trip assignment to the adjacent highway network will be confirmed as part of the assessment following a review of existing baseline highway conditions/ sensitivities and, where possible at this stage, confirmation of the origin location/s of delivery vehicles travelling to/ from the site. The number of vehicle movements are anticipated to be in accordance with those trips provided within the *Request for a Screening Opinion* which are contained herewith in Tables 1 – 3 for information.

Table 1 Number of two-way daily operational vehicle movements associated with existing operations at Cog Moors WwTW

Vehicle Type	Number of 2-way Daily Trips
HGV – Sludge Cake Export	4
HGV - Deliveries	3
Cars - Operators	6

Light Vans - Maintenance	9
Bus – Education Centre	1

Table 2 Additional daily vehicle movements during the peak period of the construction phase

Vehicle Type	Number of 2-way Daily Trips
HGV - Deliveries	4
Cars – Construction workers	50
Light Vans	15

Table 3 Number of two-way daily operational vehicle movements following development completion

Vehicle Type	Number of 2-way Daily Trips
HGV – Sludge Import	5
HGV – Sludge Cake Export	3
HGV - Deliveries	3
Cars - Operators	8
Light Vans - Maintenance	8
Bus – Education Centre	1

8 Assessment of Transport Implementation Strategy

In response to the request for a Screening Opinion the Vale of Glamorgan Highways Development team consultation response noted that the following (*2017/00162/SC1; received on 15 February 2017*) regarding projected development traffic flows:

- *The increased traffic flow as a result of the development would not have a material impact along the adjacent highway network.*
- *When a formal planning application is submitted, evidence of the predicted traffic flow should be provided, alongside how this would be controlled as not to be increased above that stated.*

Given the minor increases in operational traffic following completion of the development, the traffic impact assessment will focus on the construction phase only to identify the 'worst case scenario' traffic flows. The assessment will assign construction traffic to the highway to determine the percentage impact within the study area (including existing operational traffic at that time) specifically along the A4055 and A4231 leading to the proposed development. As the development will generate traffic movements across the day, we will assess the percentage impact of the two-way traffic generations on 12-hour traffic flows to encompass the typical construction and operational working hours proposed (typical construction working hours 07.00-19.00 Monday-Friday with more restricted hours at weekends).

Overall construction is anticipated to last approximately 15 months (plus 3 months commissioning).

The assessment will include the application of a growth factor to the baseline data to determine the peak construction year derived from the Trip End Model Presentation Program (TEMPro) for the appropriate area and road type.

9 Summary and Conclusions

A summary of the main findings will be provided and the conclusions will set out the main construction and operational impacts associated with the proposed development.

MEMO

ARCADIS Design & Consultancy for natural and built assets

SUBJECT

COG MOORS WwTW – PROPOSED ADVANCED ANAEROBIC DIGESTION (AAD) PLANT

TRAFFIC & TRANSPORT PRE-APPLICATION CONSULTATION NOTE

DATE

09 JUNE 2017

COPIES TO

PAUL HARRISON

VALE OF GLAMORGAN COUNCIL / HIGHWAY AND ENGINEERING SERVICES

FROM

MATTHEW FRY – PRINCIPAL TRANSPORT PLANNER

ARCADIS, ARCADIS CYMRU HOUSE, FORTRAN ROAD, ST MELLONS BUSINESS PARK, CARDIFF, CF3 0EY

matthew.fry@arcadis.com

T. 02920 926886 | M. 07841 861627

Baseline Traffic Flows

Traffic flows are available from the *Department for Transport (DfT) Count Point Data*[1] database.

The latest available Annual Average Daily Flow (AADF) data for 2016 on the A4055 and A4231 are summarised in Table 1 for both total traffic and HGV flows (two-way).

It can be seen that existing HGV flows are relatively low as a percentage throughout the highway assessed.

Table 1 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%

[1] http://www.dft.gov.uk/traffic-counts/

Construction Trips and Impact

Construction Trips

The updated forecast average and peak construction flows forecast have been indicated in Tables 2 and 3 respectively.

- Overall construction is anticipated to last approximately 15 months (plus 3 months commissioning).
- The peak period of construction is proposed to occur between September 2018 – March 2019.
- Construction workers will arrive between 07:30 – 08:00 and leave between 17:00 – 19:00.
- Construction HGVs and vans would arrive and depart throughout the course of the day.

*Table 2 **Average** additional daily vehicle movements during the construction phase*

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

*Table 3 Additional daily vehicle movements during the **peak period** of the construction phase*

Vehicle Type	Number of 2-way Daily Trips
HGV - Deliveries	4
Cars – Construction workers	50
Light Vans	15
Total	**69**

Impacts of Construction Vehicle Traffic

Table 4 subsequently outlines the projected short-term percentage net increases in total daily traffic as a result of the average and peak daily construction trips (based on all constructions vehicle using the A4055 and A4231 as proposed). For both routes these are extensively low. The vehicles generated during the average and peak construction periods would therefore have a negligible short-term impact in terms of net change in traffic flows along the expected key strategic vehicle routes throughout the construction period.

Table 4 Percentage Net Increase in Total Daily Traffic during the Construction Period (15 months)

Road Link	Location	Count Point ID	Total Traffic	% Net Increase Average Construction Flows	% Net Increase Peak Construction Flows
A4055	Near A4055/ Green Lane junction	10630	18,239	0.22%	0.38%
A4231	North of A4231/ A4055 Junction	99962	17,221	0.24%	0.40%

Operational Trips and Impact

The existing and forecast operational trips following completion of the enhancements have been outlined in Tables 4 and 5 respectively. This indicates a net increase of just 8 two-way daily trips based against existing conditions which is anticipated to have a negligible impact on the local highway network.

Table 5 Number of two-way daily operational vehicle movements associated with existing operations at Cog Moors WwTW

Vehicle Type	Number of 2-way Daily Trips
HGV – Sludge Cake Export	4
HGV - Deliveries	3
Cars - Operators	6
Light Vans - Maintenance	9
Bus – Education Centre	1
Total	**23**

Table 6 Number of two-way daily operational vehicle movements following development completion

Vehicle Type	Number of 2-way Daily Trips
HGV – Sludge Import	7
HGV – Sludge Cake Export	4
HGV - Deliveries	3
Cars - Operators	8
Light Vans - Maintenance	8
Bus – Education Centre	1
Total	**31**

A4055/ Green Lane Junction

- Operational workers will arrive circa 08:00 for the start of the working shifts with their exit spread throughout the day.
- Operational vans/ HGVs would arrive and depart throughout the course of the day.
- Other than providing agricultural access, Green Lane is predominantly used for access to the WwTW only. The number of trips using the A4055/ Green Lane junction is therefore extensively low and the additional operational (and short-term construction trips) are anticipated to retain a negligible impact on the operation of the junction for which we would not propose completion of capacity analysis.

Matthew Fry

Subject: FW: Transport Scoping Report - DCWW

From: Harrison, Paul D (Agency) [mailto:pdharrison@valeofglamorgan.gov.uk]
Sent: 15 June 2017 09:37
To: Matthew Fry <Matthew.Fry@arcadis.com>
Cc: Howells, Lee M <LMHowells@valeofglamorgan.gov.uk>; Simpson, Mark <MSimpson@valeofglamorgan.gov.uk>
Subject: RE: Transport Scoping Report - DCWW

Matthew

Your comments are accepted

Regards

Paul Harrison
Highway and Engineering Services
Planning and Transportation Services / Gwasanaethau Cynllunio a Thrafnidiaeth
Vale of Glamorgan Council / Cyngor Bro Morgannwg
tel / ffôn: 02920 673151
mob / sym:
e-mail / e-bost: pdharrison@valeofglamorgan.gov.uk

From: Matthew Fry [mailto:Matthew.Fry@arcadis.com]
Sent: 09 June 2017 14:10
To: Harrison, Paul D (Agency)
Cc: Howells, Lee M; Simpson, Mark
Subject: RE: Transport Scoping Report - DCWW

Paul,

Many thanks for getting back to me with your comments for the Cog Moors scheme.

In response to your comments I have provided an additional technical note to hopefully negate the requirement to complete any new ATC or junction counts/ capacity assessment.

In summary:

- The note includes updated average and peak construction traffic flows which, when compared to available Department for Transport (DfT) Count Point Data for the A4055 and A4231, indicates very minor short-term traffic increases in AADF for the construction period.

- Operational traffic is also very low with an increase of just 8 daily two-way trips against 23 existing two-ways trips, which should hopefully negate the requirement for capacity assessment at this junction.

I would be grateful if you could consider the attached and I would be more than happy to discuss any further details which may help demonstrate the development impact.

Regards,

Matthew

From: Harrison, Paul D (Agency) [mailto:pdharrison@valeofglamorgan.gov.uk]
Sent: 02 June 2017 12:27
To: Matthew Fry <Matthew.Fry@arcadis.com>
Cc: Howells, Lee M <LMHowells@valeofglamorgan.gov.uk>; Simpson, Mark <MSimpson@valeofglamorgan.gov.uk>
Subject: RE: Transport Scoping Report - DCWW

Matthew

Following your email below, the scope of your proposed assessment is generally acceptable. However, up to date baseline traffic data will be required along the A4055 and A4231 over a period of 7 full days, which you will be required to provide and use within your assessment. In addition, a classified turning survey at the junction of the site access and the A4055 during the AM (0730 – 0930) and PM (1630-1830) peak periods is require to be provided. Note, there may be a requirement to model the junction of the site access and the A4055, subject to demonstrating the likely traffic generation associated with the proposals.

In term of the assessment of Personal Injury Accidents along the highway network, you will need to contact the Welsh Assembly on 029 2037 0355 or stats.transport@wales.gsi.gov.uk in order to acquire the STATS 19 accident data for the most recent 5 year period.

Regards

Paul Harrison
Highway and Engineering Services
Planning and Transportation Services / Gwasanaethau Cynllunio a Thrafnidiaeth
Vale of Glamorgan Council / Cyngor Bro Morgannwg
tel / ffôn: 02920 673151
mob / sym:
e-mail / e-bost: pdharrison@valeofglamorgan.gov.uk

From: Matthew Fry [mailto:Matthew.Fry@arcadis.com]
Sent: 22 May 2017 09:48
To: Howells, Lee M
Subject: RE: Transport Scoping Report - DCWW

Hi Lee,

I hope you're well.

I just wanted to check on progress with regard to the Transport Scoping note and whether you'd had a chance to forward on to Highways Development?

Many thanks,

Matthew

From: Matthew Fry
Sent: 12 May 2017 16:10
To: 'Howells, Lee M' <LMHowells@valeofglamorgan.gov.uk>
Subject: Transport Scoping Report - DCWW

Lee,

Please find attached our proposed Transport Scoping report to support the development of a Transport Statement. This scoping report in relation to proposed Welsh Water development work at their existing Cog Moors treatment works, situated just south of Dinas Powys.

I would be grateful if you could please forward on to the traffic team for their consideration and feedback.

If there are any queries then please don't hesitate to contact me.

Kind regards,

Matthew

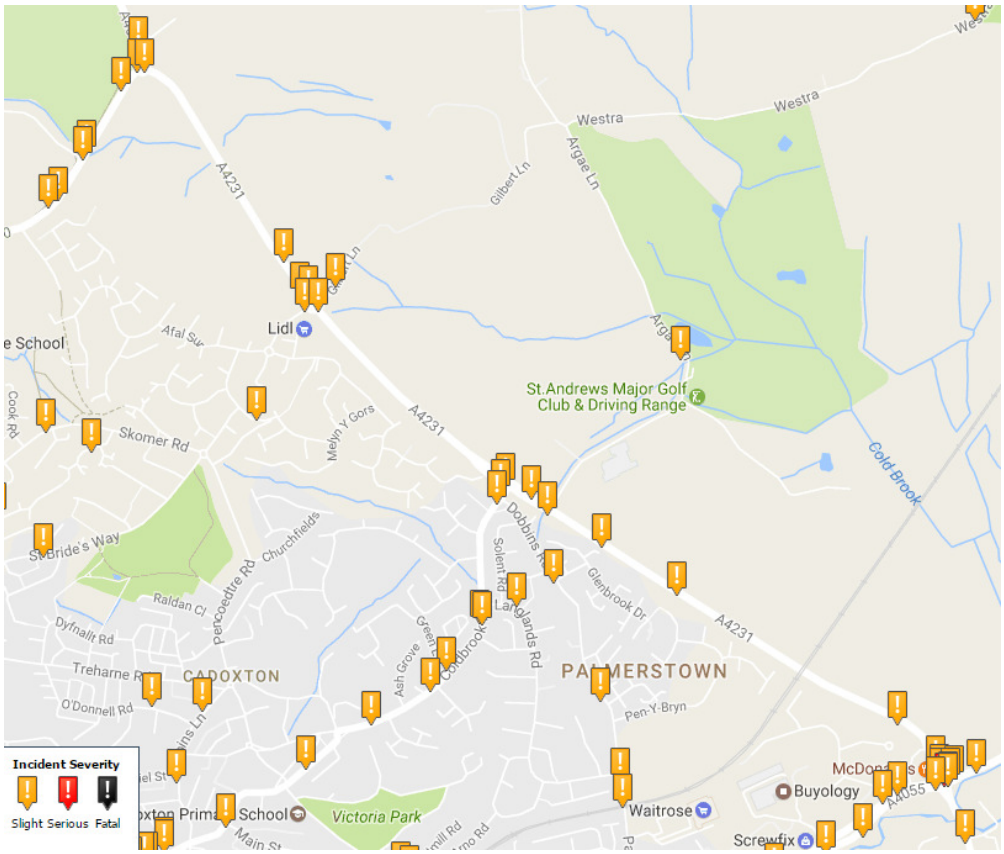
Matthew Fry BA (Hons) CMILT | Principal Transport Planner | matthew.fry@arcadis.com
Arcadis | Arcadis Cymru House | CF3 0EY | United Kingdom
T. 02920 926886 | M. 07841 861627
www.arcadis.com

ARCADIS Design & Consultancy for natural and built assets

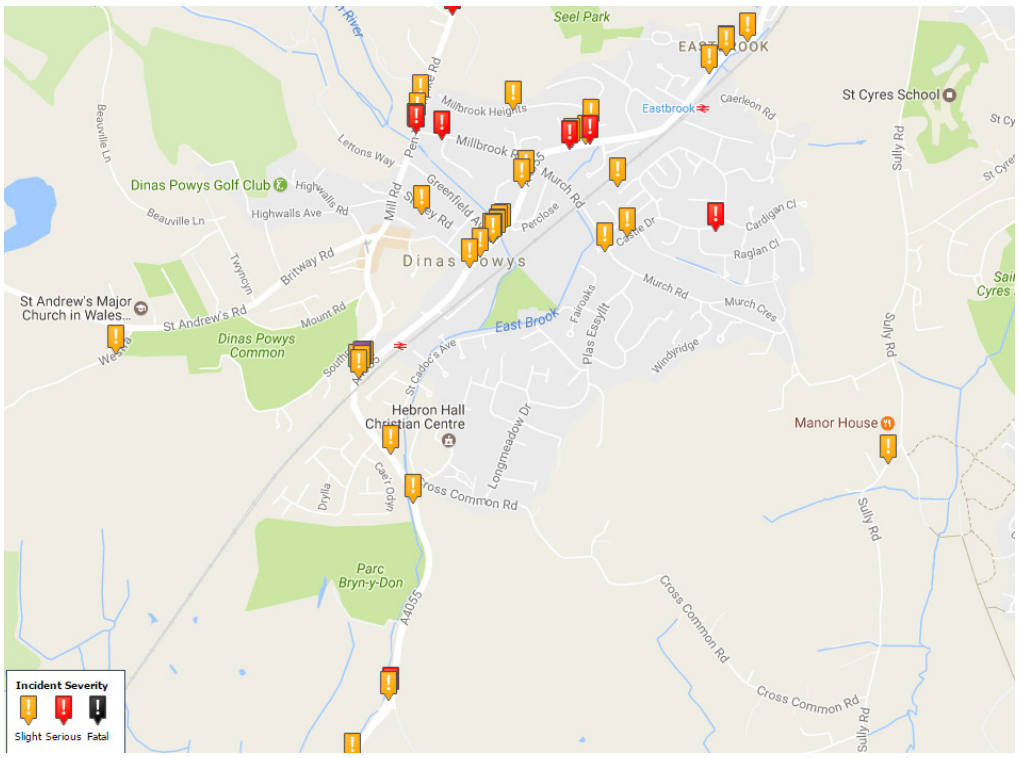
APPENDIX B

Accident Maps

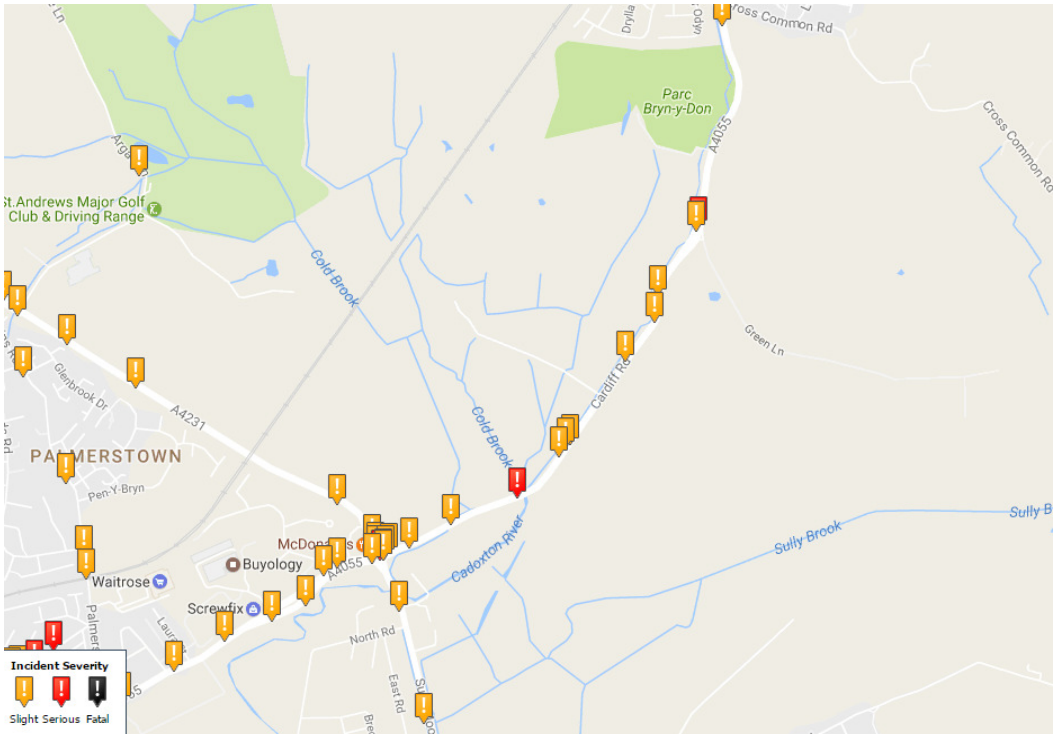
A4231



A4055 Cardiff Road (North of Green Lane)



A4055 Cardiff Road (South of Green Lane)



Arcadis (UK) Limited

Arcadis Cymru House
St Mellons Business Park
Fortran Road
Cardiff
CF3 0EY
United Kingdom

T: +44 (0)29 2092 6700

arcadis.com