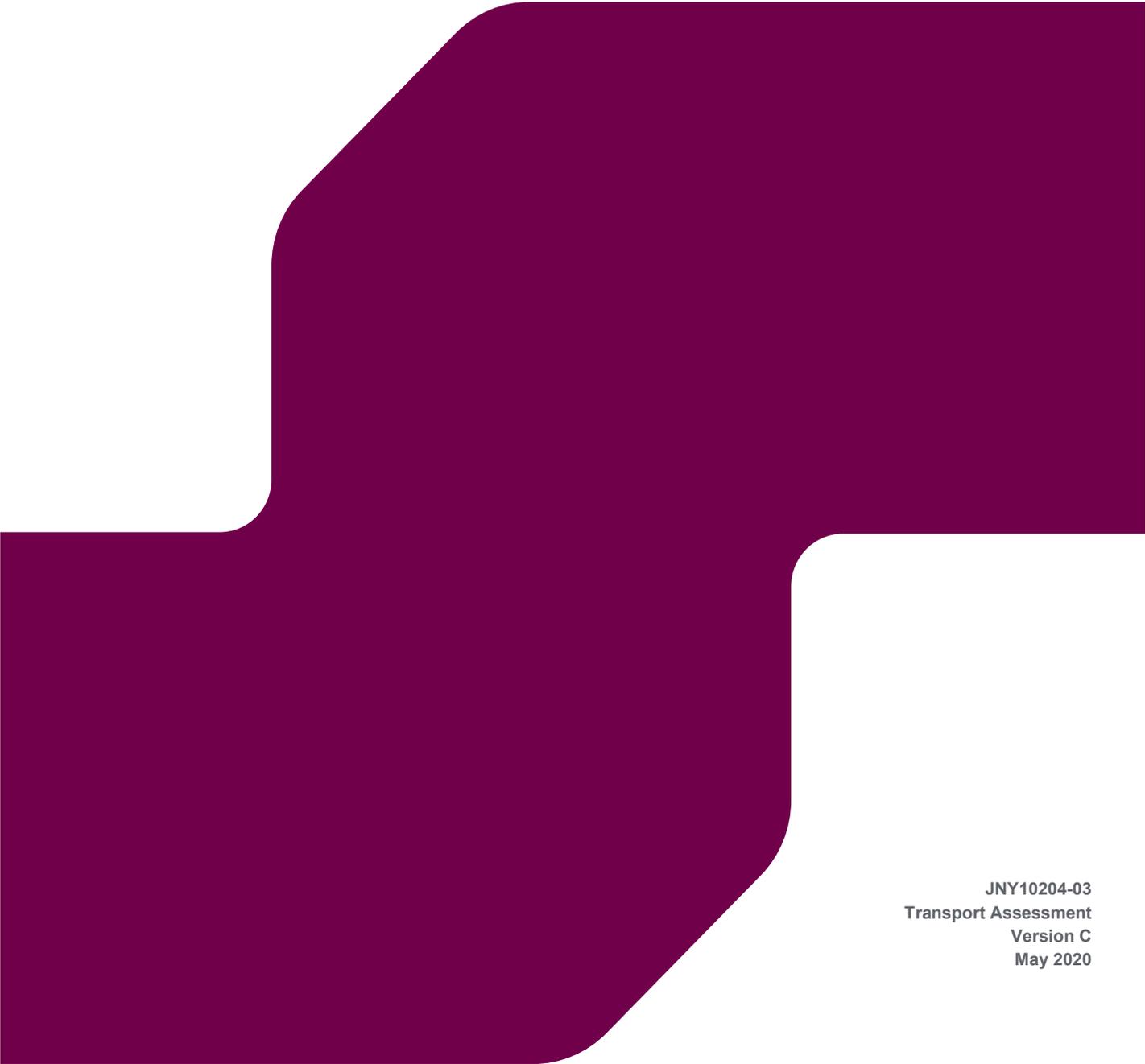


USKMOUTH POWER STATION DEVELOPMENT

Transport Assessment



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Transport Assessment
Version C
May 2020

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Contents

1	INTRODUCTION.....	1
2	EXISTING SITUATION	3
3	DEVELOPMENT PROPOSALS	9
4	TRANSPORT RELATED POLICIES	12
5	FUTURE YEAR TRAFFIC FLOWS	17
6	TRIP GENERATION, MODE SHARE AND ASSIGNMENT	22
7	TRANSPORT ASSESSMENT	35
8	TRANSPORT IMPLEMENTATION STRATEGY.....	45
9	SUMMARY AND CONCLUSIONS	47

Figures and Appendices

FIGURES

FIGURE 1 – SITE LOCATION PLAN

APPENDICES

APPENDIX A – 2019 AUTOMATIC TRAFFIC COUNT DATA

APPENDIX B – 2019 MANUAL CLASSIFIED COUNT DATA

APPENDIX C – 2019 HOURLY LINK TRAFFIC FLOWS

APPENDIX D – CYCLE ROUTES

APPENDIX E – 2022 BASE TRAFFIC FLOWS

APPENDIX F – 2026 BASE TRAFFIC FLOWS

APPENDIX G – COMMITTED SITES

APPENDIX H – COMMITTED TRAFFIC FLOWS

APPENDIX I – FUTURE YEAR TRAFFIC FLOWS

APPENDIX J – SUP CONSTRUCTION TWO-WAY HGV FLOW CALCULATIONS

APPENDIX K – CONSTRUCTION STAFF MOVEMENTS

APPENDIX L – 2022 BASELINE + CONSTRUCTION

APPENDIX M – HGV GENERATION (OPERATION)

APPENDIX N – OPERATIONAL HGV HOURLY FLOWS

APPENDIX O – STAFF DISTRIBUTION

APPENDIX P – OPERATIONAL STAFF HOURLY FLOWS

APPENDIX Q – 2026 BASELINE + OPERATION

APPENDIX R – CONSTRUCTION TRAFFIC LINK IMPACT ASSESSMENT

APPENDIX S – TRAFFIC FLOW DIAGRAMS

APPENDIX T – WEST NASH ROAD / NASH ROAD PRIORITY JUNCTION ASSESSMENT
(CONSTRUCTION)

APPENDIX U – NASH ROAD / MEADOWS ROAD PRIORITY JUNCTION ASSESSMENT
(CONSTRUCTION)

APPENDIX V – MEADOWS ROAD / A4810 QUEENSWAY MEADOWS JUNCTION
ASSESSMENT (CONSTRUCTION)

APPENDIX W – OPERATIONAL TRAFFIC LINK IMPACT ASSESSMENT

**APPENDIX X – WEST NASH ROAD / NASH ROAD PRIORITY JUNCTION ASSESSMENT
(OPERATION)**

**APPENDIX Y – NASH ROAD / MEADOWS ROAD PRIORITY JUNCTION ASSESSMENT
(OPERATION)**

**APPENDIX Z – MEADOWS ROAD / A4810 QUEENSWAY MEADOWS JUNCTION
ASSESSMENT (OPERATION)**

1 INTRODUCTION

- 1.1 The Uskmouth Power Station Conversion Project (referred to as the “Uskmouth Conversion Project”) proposes to convert and the existing coal fired power plant at Uskmouth Power Station to operate as a plant which would generate electricity through the combustion waste derived fuel pellets. SIMEC Atlantis Energy Limited (“Atlantis”) are the developer of the Uskmouth Conversion Project.
- 1.2 The “Uskmouth Power Station” is the name of the site of an existing coal fired power station located near Newport in South Wales. Uskmouth Power Station is owned by the Applicant SIMEC Uskmouth Power Limited (“SUP”), a wholly owned subsidiary of Atlantis. This Environmental Statement (“ES”) has been prepared by RPS on behalf of SUP.
- 1.3 The construction phase of the Uskmouth Conversion Project will require the following works :
- 1.4 The Proposed Operational Development (referred to as the “Proposed Development”) which consists of all fuel storage and material handling infrastructure to be constructed external to the existing power station building,
- 1.5 Power Station Upgrade, the works required for fuel combustion equipment conversion and plant life extension to be conducted inside the existing power station buildings (referred to as the “Power Station Upgrade”)
- 1.6 Once the Proposed Development works and Power Station Upgrade is completed the Uskmouth Conversion Project will be able to commence operation through the combustion of waste-derived fuel pellets either exclusively or co-fired with other biomass fuels for the sole purpose of electricity generation.
- 1.7 The ES reports on the findings of the Environmental Impact Assessment (EIA) process and accompanies the planning application for the construction of the Proposed Development that together with the construction of Power Station Upgrade will facilitate the delivery of the operational phase of the Uskmouth Conversion Project.
- 1.8 This Transport Assessment (TA) has been prepared by RPS on behalf of SIMEC Uskmouth Power Ltd to support a planning application for a proposed Development at West Nash Road, Newport. SIMEC Atlantis Energy Limited (“Atlantis”) are the developer of the Uskmouth conversion Uskmouth Conversion Project. The Uskmouth power station located near Newport in South Wales is owned by SIMEC Uskmouth Power Limited (“SUP”), a wholly owned subsidiary of Atlantis The proposed development site is located on the eastern bank of the River Usk, close to the confluence with the Severn Estuary, around 4 km south of central Newport, as shown on **Figure 1**.
- 1.9 Uskmouth Power Station was historically made up of two power plants; Uskmouth A (decommissioned in 1990’s), and Uskmouth B. The Proposed Development would be implemented entirely within the site of the existing Uskmouth B coal-fired power station, referred to as Uskmouth Power Station.
- 1.10 Uskmouth B power station was constructed in the late 1950s and early 1960s, reaching full commercial operation in 1962, with capacity of up to 363 MW electricity. Uskmouth Power Station was closed in 1995 before undergoing refurbishment to increase capacity to 393 MW and began producing electricity again in 2001. The power station was closed again in 2014, re-

opening in 2015 and continuing to operate until a fault in April 2017 caused the shut-down of the power station, which has been closed to the present day.

- 1.11 This TA assesses the transport implications of the construction of the Proposed Development and Power Station Upgrade the Uskmouth Conversion Project which they facilitate forms an appendix to the Environmental Statement submitted in support of the planning application.
- 1.12 It has been prepared in accordance with Technical Advice Note (TAN) 18: Transport, published by the, then, Welsh Assembly Government in 2007. It has also been prepared in accordance with comments received from the Senior Traffic, Transport and Development Officer at Newport City Council during a meeting on 19th December 2019, during which the Officer was satisfied with the proposed scope of assessment and would have no concerns if the HGV generation was lower than previous operation activity from the Uskmouth coal-fired power station.

Report Structure

- 1.13 This TA has been prepared in accordance with the Planning Policy Wales Edition 10 (2018), Wales Transport Strategy (2008) and Sustainable Development Scheme 'One Wales: One Planet' (2009).
- 1.14 Section 2 sets out the existing situation and assesses the adjacent highway network, road safety, facilities for pedestrians and cyclists, public transport facilities and existing traffic flows. Section 3 provides full details of the Uskmouth Conversion Project, whilst an assessment is made against current local and national policies in respect to transport in Section 4.
- 1.15 Future year traffic flows are set out in Section 5 and details of the likely trip generation, distribution, assignment and mode share of trips is set out in Section 6. An assessment of the likely transport impact is set out in Section 7.
- 1.16 A Transport Implementation Strategy is set out in Section 8 and a summary is provided in Section 9, where it is concluded that there are no transport or highway related reasons for not granting consent to the Uskmouth Conversion Project.

2 EXISTING SITUATION

- 2.1 This section considers the current site use, location and transport network. This includes the walking, cycling and public transport facilities available within proximity of the site. It also assesses the local highway network and Personal Injury Accidents on the highway network for the latest available five years.

Site Location, Description and Access

- 2.2 The site is located approximately 4.5km southeast of Newport city centre, and the immediate site context is largely industrial. To the immediate west of the site, the site adjoins the Severn Power combined cycle gas turbine (CCGT) power station which was constructed in 2007 on the site of the former Uskmouth A coal-fired power station. The wider site setting is industrialised to the north, with the Liberty Steel works and industrial estates stretching from the Proposed Development site to the A48 'Southern Distributor Road' dual carriageway.
- 2.3 To the immediate north of the site is the River Usk, and to the east is the railway line and sewage treatment works. To the south, former ash pits (now vegetated) border the site, beyond which is the Newport Wetlands Nature Reserve.
- 2.4 The River Usk and the Severn Estuary lie beyond the CCGT power station and Newport Wetlands to the west and south. On the west bank of the Usk is Alexandra Docks, with commercial and industrial land-uses.
- 2.5 The main power station buildings include offices, workshop buildings and car parking. Vehicular access to the site is currently taken via an access road in the south-eastern corner of the site. The access road routes to the adopted highway where it joins West Nash Road, and the access route from the strategic road network to the site is detailed below.

Highway Network

West Nash Road

- 2.6 Uskmouth B Power Station is currently accessed from West Nash Road, a single carriageway road generally 6-6.5m in width. West Nash Road primarily has the typical characteristics of a rural road with a 60mph speed limit, no footways or street lighting, with grass verges and hedgerow on both sides of the carriageway.
- 2.7 As West Nash Road routes east through Nash and towards the priority junction with Nash Road / Goldcliff Road, it becomes a 30mph single carriageway road with a footway and street lighting.
- 2.8 At its eastern end, West Nash Road forms the minor arm of a simple priority junction with Nash Road. In liaison with highway officers, they advised that the West Nash Road / Nash Road junction was recently improved to accommodate HGVs.
- 2.9 A bus stop and post box are located on West Nash Road approximately 15m back from the give-way line. To the immediate south of the junction is a residential dwelling and to the immediate north is Windmill Reen.

Nash Road

- 2.10 Nash Road routes north from West Nash Road to Meadows Road as a single carriageway road with a 40mph speed restriction, an intermittent footway on its eastern side, no street lighting, no parking restrictions and some frontage accesses. Broadly half way between West Nash Road and Meadows Road, Nash Road narrows to a single track, however, there are suitable advance warning signs and there is clear forward visibility at both ends to enable vehicles to give way to one-another. Nash Road continues north where it forms a priority junction with Meadows Road, where Nash Road continues north-west along the minor arm of the junction, where it routes to an industrial area, residential area, and high school and college campus. The speed limit of Nash Road reduces to 20mph within the vicinity of the school, with additional traffic calming measures in place such as speed bumps and road narrowings. Nash Road continues north to join the A48 Southern Distributor Road via a four-arm junction.

Meadows Road

- 2.11 Meadows Road routes broadly north to south between Nash Road and the A4810, with which it forms the southern arm of a four-arm roundabout. Meadows Road is a single carriageway road with a combined footway/cycleway along its eastern side, an intermittent footway along its western side, street lighting, no parking restrictions and a 40mph speed restriction. Meadows Road is an established HGV route providing access to the large industrial park between Meadows Road and the A4 Southern Distributor Road.

A4810 Queen's Way / Queensway Meadows

- 2.12 The A4810 routes broadly east-west between the M4 Junction 23A, and the A48. The A4810 is a dual carriageway road with footways, street lighting and a 40mph speed restriction. Approximately 5.5km east of the Meadows Road junction, the A4810 becomes a single carriageway road and continues to the grade-separated junction of the M4 junction 23A roundabout. Approximately 750m to the west, the A4810 Queensway Meadows joins the A48 Southern Distributor Road via a four-arm roundabout.
- 2.13 The A4810 is also a well-established HGV route, providing access to Meadows Road from the A48 Southern Distributor Road and in turn the M4 west, and from junction 23A of the M4 to the east.

A48 Southern Distributor Road

- 2.14 The A48 Southern Distributor Road is one of the key roads into Newport, routing from Junction 24 of the M4 to the east, routing west to the south of Newport where it joins the M4 at Junction 28.
- 2.15 The A48 Southern Distributor Road acts as the Newport southern bypass, and as such carries a large volume of traffic. The A48 routes broadly east-west between junctions 24 and 28 of the M4 and is a dual carriageway road between both junctions. It retains its street lighting and footway along its length.

Active Modes

Pedestrian Access

- 2.16 Manual for Streets (MfS), published by the Department for Communities and Local Government and Department for Transport in 2007, refers to walking distances and advises ‘*PPG13 states that walking offers the greatest potential to replace short car trips, particularly those under 2km*’.
- 2.17 Paragraph 2.3 of the Design Manual for Roads and Bridges TD91/05 Provision for non-motorised users states: ‘*walking is used to access a wide variety of destinations including educational facilities, shops, and places of work, normally within a range of up to 2 miles*’. Such a distance captures the majority of the local urban and residential area.
- 2.18 The Chartered Institute of Highways and Transportation (CIHT) publication Providing for Journeys on Foot suggests acceptable walking distances for various land uses. These are based on an average walking speed of approximately 1.4 metres / second, which equates to approximately 400 metres in five minutes or 4.8 kilometres per hour as set out in **Table 2.1**.

Table 2.1: CIHT’s Acceptable Walking Distances

CIHT’s Acceptable Walking Distances			
Definition	Town Centres	Commuting / School	Elsewhere
Desirable	200m	500m	400m
Acceptable	400m	1000m	800m
Preferred Maximum	800m	2000m	1200m

Source: Chartered Institute of Highways and Transportation’s ‘Providing for Journeys on Foot’

- 2.19 The above can be used to consider that the Proposed Development site’s location to facilities in the surrounding residential area is within the acceptable and preferred maximum guidelines for users travelling to the Proposed Development by public transport or walking.
- 2.20 There are pedestrian facilities extending from Nash in the form of a footway on the southern side of the carriageway with street lighting which stops approximately 1.4km from the site access. The footway extends to the east from Nash to the West Nash Road / Nash Road junction, where it continues north along the eastern side of the carriageway for approximately 500m.

Public Rights of Way

- 2.21 There are several Public Rights of Way (PRoW) within the vicinity of the site. Footpaths 401/12/1 and 401/16/1 route along the southern boundary of the power station and through the Wetlands to join footpath 401/15/2. Footpath 401/15/2 routes broadly east-west towards Nash through farmland.

Cycle Access

- 2.22 Paragraph 2.9 of TA91/05 states: *'Nearly three quarters of all journeys are less than 5 miles in length, distances that could easily be cycled by the majority of people'*. Paragraph 2.11 goes on to state: *'Cycling is used for accessing a variety of different destinations, including educational facilities, shops and places of work, up to a range of around 5 miles'*.
- 2.23 Paragraph 1.5.1 of LTN2/08 (Cycle Infrastructure Design) states: *'Urban networks are primarily for local journeys. In common with other modes, many utility cycle journeys are under three miles (ECF, 1998), although, for commuter journeys, a trip distance of over five miles is not uncommon'*.
- 2.24 The nearest National Cycle Route is Route 4, a long distance route between London and Fishguard via Reading, Bath, Bristol, Newport, Swansea, Carmarthen, Tenby, Haverfordwest and St. Davids. Route 4 routes west to east through the south of Newport, with the traffic-free route on Corporation Road to the north of the site. As Route 4 routes south of Corporation Road, the combined foot / cycleway routes away from Corporation Road and routes along a Public Right of Way towards Nash Road.
- 2.25 Traffic flows along West Nash Road and Nash Road are sufficiently low to be conducive to cycling.
- 2.26 The above shows that cycling distances of up to 5 miles to a place of work is not uncommon; such a distance includes the southern regions of Newport's urban areas, and there are recognised cycle routes upon which to do so.

Bus Services

- 2.27 The RSPB Newport Wetlands site, approximately 350m from the site access, has a bus stop from which the number 63 service is operated by Newport Bus. The service operates between Newport Bus Station and the Wetlands Reserve with two services per day, arriving at 08:06 and 16:16 and routing back to Newport Bus Station.

Air Quality Management Areas (AQMA)

- 2.28 The Department for Environment, Food and Rural Affairs website (<https://uk-air.defra.gov.uk/>) has been accessed to ascertain whether there is an AQMA within the vicinity of the site. The site does not lie within a designated AQMA.

Committed Development

- 2.29 Further details of the committed developments that have been assessed are outlined in Section 5 of this report.

Traffic Surveys

- 2.30 Traffic surveys were undertaken by an independent survey company to obtain background traffic flows at key junctions and highway links across the local highway network. The surveys comprised Manual Classified Counts (MCCs) at junctions, and Automatic Traffic Counters

(ATCs) on sections of road between junctions. The ATC surveys were placed between Friday 18th October 2019 and Thursday 24th October 2019, and their locations are as follows:

- West Nash Road - west of Nash village;
 - West Nash Road - east of Nash village;
 - Nash Road – between West Nash Road and Meadows Road junctions;
 - Meadows Road - South of Industrial Park;
 - Meadows Road - North of Industrial Park;
 - A4810 west of the Meadows Road Roundabout; and
 - A4810 Queens Way east of the Glan Llyn Roundabout.
- 2.31 MCCs were undertaken at the A4810 / Meadows Road roundabout, Nash Road / Meadows Road priority junction, and Nash Road / West Nash Road priority junction on Tuesday 22nd October 2019 between 07:00 and 19:00.
- 2.32 The MCCs and the ATCs undertaken on the public highway validate well against one-another with regard to the total number of vehicles; however, it was observed that the ATCs were overcounting HGVs in comparison to those counted by the MCCs along West Nash Road, Nash Road, Meadows Road and the A4810.
- 2.33 ATCs classify vehicles based on a series of criteria which can vary between survey equipment and set up / settings; therefore, the percentage of HGVs was calculated from each MCC and the factor applied to the corresponding ATC to derive the number of HGVs for a weekday. An additional factor was then applied to derive the number of HGVs on a Saturday.
- 2.34 The observed 2019 traffic flow datasets are attached at **Appendix A**. The MCCs identified the AM and PM peak hours for the local road network to be 07:30 to 08:30 and 17:00 to 18:00 respectively and these are attached at **Appendix B**. 2019 Hourly link traffic flows across the network are attached at **Appendix C**.

Road Safety

- 2.35 Personal Injury Accident (PIA) data was obtained from Crashmap for the most recent five-year period for the surrounding highway network. The study area incorporated the access route to the site from the A4810, therefore included West Nash Road, Nash Road and Meadows Road to the A4810 junction.
- 2.36 There were two injury accidents during the most recent five-year period, of which there was one slight injury accident and one serious injury accident. There were no fatal injury accidents. Both injury accidents occurred at different locations, as described below:
- One slight injury accident occurred on Meadows Road, approximately 250m south of the industrial estate access. The accident occurred in January 2017 and involved one vehicle where the driver lost control and collided with an item of street furniture; and
 - One serious injury accident occurred at the Meadows Road / Clearwater Road junction. The accident occurred in April 2018 and involved three cycles, with one cyclist shunting another from the rear and resulting in a serious injury to one cyclist.

- 2.37 Of particular note, there were no injury accidents along West Nash Road or at its junction with Nash Road.
- 2.38 From the analysis undertaken, there are a low number of injury accidents and all occurred at different locations, which suggests there are no aspects with the local highway network that contribute to a road safety issue.

Summary

- 2.39 This section has demonstrated that the Proposed Development is accessible and PIA data demonstrates a low level of injury accidents on the surrounding roads and junctions.

3 DEVELOPMENT PROPOSALS

Introduction

- 3.1 The Proposed Operational Development (referred to as the “Proposed Development”) which consists of all fuel storage and material handling infrastructure to be constructed external to the existing power station building,
- 3.2 Power Station Upgrade, the works required for fuel combustion equipment conversion and plant life extension to be conducted inside the existing power station buildings (referred to as the “Power Station Upgrade”)
- 3.3 The construction phase of the Uskmouth Conversion Project comprise; construction of the Proposed Development which together with the construction Power Station Upgrade will facilitate the delivery of the operational phase of the Uskmouth Conversion Project to generate electricity through the combustion of waste derived fuel pellets.
- 3.4 The Uskmouth Conversion Project will refurbish two of the three combustions units to provide 220 MWe (Megawatts Unit net generation export capacity). Construction is predicted to be over an 18-month period to 2021 / 2022. The operational lifetime of the project is expected to be at least 20 years post commissioning.

Construction

- 3.5 The proposed development would comprise the following elements of external construction:
- Construction of fuel storage silos, connecting conveyor systems and a fuel de-dusting building;
 - Improved rail unloading facilities for the efficient delivery of fuel;
 - Altered and updated internal road network and drainage; and
 - Vessels and infrastructure for the delivery, storage and removal of flue gas treatment (FGT) reagents and residues.
- 3.6 The type of construction vehicles would be selected by the contractor prior to and during the construction phase. However, the following vehicles would typically be used during construction:
- Excavators;
 - Cranes: Required for assembly and erection;
 - Low loaders: Required for transport of construction equipment and plant;
 - Concrete lorries;
 - Tipper lorries; and
 - Construction staff vehicles.

Operation

- 3.7 The waste-derived fuel pellets are manufactured to replicate the combustion properties of coal. The replacement and upgrade of equipment within the existing Uskmouth Power Station will be carried out within the existing building envelopes to enable the combustion of waste-derived fuel pellets either as the sole fuel type; or co-fired with other biomass fuels for the primary purpose of electricity generation.
- 3.8 For the first year of operations, as well as fuel pellets, 10,249 tpa biomass fuel may be initially required to cofire along with the fuel pellets. In the event biomass is required, biomass fuel would be delivered by road replicating previous operational Uskmouth Power Station deliveries. Biomass fuel, if required, would only be delivered during the first year of operations.
- 3.9 The Uskmouth Conversion Project intends to replicate the previous operational delivery pathways used by the coal fired power station:
- Fuel pellets delivered by rail – replicating previous operation with coal rail delivery;
 - Operational consumables delivered to Uskmouth Power Station by road;
 - Biomass delivered to Uskmouth Power Station by road during the first year of operation; and
 - Ash transported off site by road.

Site Access

- 3.10 It is proposed that road access will be taken via West Nash Road, through the existing Uskmouth Power Station main gate during the construction and operational phases.
- 3.11 This access route was formerly used as a HGV and staff access route during the operation of Uskmouth B since the 1960s. The proposals will therefore replicate the previous operational access route.
- 3.12 There is no history of any issues associated with the former use of this access route during the operation of Uskmouth B as demonstrated by an analysis of road safety data.

Operational Hours

- 3.13 The Uskmouth Power Station would be operational 24/7, however, the Uskmouth Conversion Project intends to replicate previous operational daytime HGV movements to Uskmouth Power Station between 08:00 and 18:00 Monday to Sunday.
- 3.14 The total number of vehicle movements is the combination of all one-way directional vehicle movements (i.e. all arrivals plus all departures) therefore one HGV arriving and then departing would undertake two vehicle movements or, two HGV movements equates to 1 HGV arrival and 1 HGV departure.
- 3.15

Operational Staffing and Shifts

- 3.16 The new operational organisation will have approximately 50 - 100 employees, with a net increase of 15 staff. It is anticipated Uskmouth Power Station will utilise four operational shifts with an estimated 7 operational personnel per shift on twelve-hour days and nights, four on and four off, in addition to daytime staff, who have been retained from the Uskmouth Power Station coal fired operation. The remaining staff as part of the new operational organisation will consist of daytime staff, being existing staff to be retained.
- 3.17 On a typical day, there will be two 12-hour shifts from 07:00 to 19:00, and 19:00 to 07:00, each with 7 members of staff. The remaining staff will be daytime staff already employed at the site and as such, will already be accounted for within the traffic surveys.

Staff Parking

- 3.18 There is existing parking on site associated with the offices and workshops and this parking area will be available to all staff on site as a result of the Proposed Development.

4 TRANSPORT RELATED POLICIES

National Policy

Planning Policy Wales Edition 10 (2018)

- 4.1 Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. The PPW is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars and policy clarification letters, which together with PPW provide the national planning policy framework for Wales.
- 4.2 Chapter 4 of the policy sets out criteria that all future development should incorporate within design. With regards to transport, paragraph 4.1.1 states that developments should enable people to access jobs and services through shorter, more efficient and sustainable journeys, by walking, cycling and public transport.

“By influencing the location, scale, density, mix of uses and design of new development, the planning system can improve choice in transport and secure accessibility in a way which supports sustainable development, increases physical activity, improves health and helps to tackle the causes of climate change and airborne pollution by:

- Enabling More Sustainable Travel Choices – measures to increase walking, cycling and public transport, reduce dependency on the car for daily travel;
- Network Management – measures to make best use of the available capacity, supported by targeted new infrastructure; and
- Demand Management – the application of strategies and policies to reduce travel demand, specifically that of single-occupancy vehicles.”

- 4.3 The Sustainable Transport Hierarchy for Planning within the Policy document shows the hierarchical approach to reduce vehicle trips, shown below in **Plate 1**.

Plate 1: The Sustainable Transport Hierarchy for Planning



Technical Advice Note 18 (2007)

- 4.4 The Technical Advice Note (TAN) 18: Transport, published by the, then, Welsh Assembly Government, details how the integration of land use, planning and transport should be assessed and mitigated. The Assembly Government adopts a sustainable development approach, as stated within paragraph 2.2. This includes the following:
- Integration of transport and land use planning;
 - Integration between different types of transport; and
 - integration of transport policy with policies for the environment, education, social justice, health, economic development and wealth creation.
- 4.5 Paragraph 2.3 of TAN 18 states that the integration can help the Assembly Government achieve these environmental outcomes, together with its wider sustainable development policy objectives by:
- Promoting resource and travel efficient settlement patterns;
 - Ensuring new development is located where there is, or will be, good access by public transport, walking and cycling thereby minimising the need for travel and fostering social inclusion;
 - Managing parking provision;
 - Ensuring that new development and major alterations to existing developments include appropriate provision for pedestrians (including those with special access and mobility requirements), cycling, public transport, and traffic management and parking/servicing;
 - Encouraging the location of development near other related uses to encourage multi-purpose trips;
 - Promoting cycling and walking;
 - Supporting the provision of high quality, inclusive public transport;
 - Supporting provision of a reliable and efficient freight network;
 - Promoting the location of warehousing and manufacturing developments to facilitate the use of rail and sea transport for freight;
 - Encouraging good quality design of streets that provide a safe public realm and a distinct sense of place; and
 - Ensuring that transport infrastructure or service improvements necessary to serve new development allow existing transport networks to continue to perform their identified functions.
- 4.6 Paragraph 3.7 of TAN 18 states that development plans should seek wherever possible to identify locations which offer genuine and easy access by a range of transport modes and therefore:
- 'Allocate major generators of travel demand ... near public transport interchanges, as a means to reduce car dependency and increase social inclusion by ensuring that development is accessible by public transport for those without access to a car;

- Consider the potential for changing existing unsustainable travel patterns, for example through a co-ordinated approach to development plan allocations and transport improvements; and
 - Consider the potential for changing existing unsustainable travel patterns, for example through a co-ordinated approach to development plan allocations and transport improvements.'
- 4.7 With regard to pedestrian facilities, within paragraph 6.2 it is stated that when preparing development plans, design guidance, master plans and in determining planning applications authorities should:
- 'Ensure that new development encourages walking as a prime means for local journeys by giving careful consideration to location, access arrangements and design, including the siting of buildings close to the main footway, public transport stops and pedestrian desire lines.'
- 4.8 Paragraph 6.2 also states that authorities should also ensure that pedestrian routes provide a safe and fully inclusive pedestrian environment.
- 4.9 With regard to cycling, paragraph 6.3 states that Cycling has potential to act as a substitute for shorter car journeys in urban or rural areas, or form part of a longer journey when combined with public transport. Paragraph 6.4 states that local authorities should aim to develop an effective network of cycle routes, including safe routes to schools. Development plans, design guidance, and master plans should include encourage cycling through the following measures:
- 'Identification of new cycle routes utilising existing highway (including public rights of way where appropriate), disused railway lines, space alongside rivers and canals, parks and open space;
 - Ensuring that new development encourages cycling by giving careful consideration to location, design, access arrangements, travel 'desire lines' through a development, and integration with existing and potential off-site links;
 - Securing provision of secure cycle parking and changing facilities in all major employment developments, including retail and leisure uses, town centres, transport interchanges, educational and health institutions;
 - Securing provision of cycle routes and priority measures in all major developments;
 - Adopting minimum cycle parking standards within their parking strategies - for commercial premises these standards should include cycle parking for both employees and visitors; and
 - Ensuring new residential developments provide storage for bicycles so they are easily available for everyday use while secure enough to be left unattended for long periods of time.'

Wales Transport Strategy - One Wales - Connecting the Nation (2008)

- 4.10 The One Wales Transport Strategy aims to maximise the positive contribution that transport makes, and to promote healthy lifestyles such as walking and cycling for journeys. The Strategy

- prioritises actions that influence the number of trips, distance travelled, and mode of travel chosen, such as ensuring that new developments take transport implications into account. It links decisions on the location of employment with the impacts they will have on the way people travel.
- 4.11 The Welsh Government promotes the widespread adoption of Travel Plans by new developments. These assist with the efficient management of the highway network and promote alternative modes of transport.

Sustainable Development Scheme 'One Wales: One Planet' (2009)

- 4.12 The Sustainable Development Scheme of the Welsh Assembly Government titled 'One Wales: One Planet' (May 2009) has a main outcome of "a low carbon transport network which promotes access rather than mobility, so that we can enjoy facilities with much less need for single occupancy car travel".
- 4.13 Under the heading of 'What a Sustainable Wales Would Look Like' is:
- "Walking and cycling are much more commonplace. There is greatly enhanced provision for cyclists and pedestrians... with improved walking and cycling networks, as well as better street design and traffic management measures.
 - There is a coherent network of sustainable transport options within rural Wales.
 - Travel Plans are part of all new developments. All employers develop and implement Travel Plans."

Active Travel (Wales) Act (2013)

- 4.14 The Active Travel (Wales) Act makes it a legal requirement for local authorities in Wales to map and plan suitable routes for active travel, and to build and improve their infrastructure for walking and cycling each year. The Act creates new duties for highway authorities to consider the needs of walkers and cyclists and make better provision for them. It also requires both the Welsh Government and local authorities to promote walking and cycling as a mode of transport.
- 4.15 By connecting key sites such as workplaces with active travel routes, the Act will encourage people to rely less on their cars when making journeys. In considering whether it is appropriate for a route to be regarded as an active travel route, a local authority must take into account:
- whether the route facilitates the making by, or by any description of, walkers and cyclists of active travel journeys; and
 - whether the location, nature and condition of the route make it suitable for safe use by, or by any description of, walkers and cyclists for the making of such journeys.
- 4.16 The Act requires Local authorities to produce and publish Existing Routes Maps. These maps show routes within the area that are suitable for active travel and which meet standards set by the Welsh Government. As such the Existing Routes Maps, do not show all available walking and cycling routes within an area.
- 4.17 The Existing Route Maps are available at **Appendix D**.

Local Transport Policy

Newport City Council Local Development Plan 2011-26 (January 2015)

4.18 Paragraphs 1.5 and 1.6 of the Local Development Plan (LDP) state that although industry was a mainstay of the Newport economy, it has gone into decline. As a result, regeneration is now a key part of the Plan, along with brownfield sites.

4.19 Paragraph 6.19 of the LDP states the following:

“Newport Docks provides a particular opportunity to provide for port related employment. One aspect of this is in energy generation, where it has certain locational advantages, including accessibility for fuel and distance from residential or other uses upon which there might be an impact. Recent schemes granted planning permission have included a biomass powerplant, the erection of wind turbines and the installation of solar PV panels. Development that reduces emissions of greenhouse gases in a sustainable manner similar to those already permitted, including renewable and low carbon energy generation, will be supported.”

Summary

4.20 It is concluded that the proposals are generally consistent with policies relating to transport and highways at the national and local levels. The site is well located in relation to the road network and utilises the existing infrastructure available at the former Uskmouth B Power Station, including its access route. In addition, the site is well situated in terms of cycling distance from existing local areas and the RSPB Newport Wetlands bus stop.

5 FUTURE YEAR TRAFFIC FLOWS

Future Assessment Years

Construction

- 5.1 The construction assessment is based on a reasonable worst case construction scenario which considers the construction phase of the Proposed Development and Power Station Upgrade to facilitate operation of 220 MW Uskmouth Conversion Project. The construction phase occurs over 18 months including ground preparation for silo foundations and rail unloading facility. The Proposed Development is anticipated to utilise standard construction methodologies.
- 5.2 A peak construction year of 2022 has been assessed. The future year scenario of 2022 has been created by applying traffic growth rates to the observed traffic flows set out in Section 2, then adding in the traffic flows of 'committed developments' i.e. developments that have planning consent but are not yet generating traffic on the network.
- 5.3 Traffic growth rates have been estimated using the DfT software TEMPro (version 7.2). The TEMPro software presents the output of the DfT's National Trip End Model which forms part of the National Transport Model (NTM). The DfT's Webtag guidance Unit 3.15.2 advises the use of NTM in preference to the National Road Traffic Forecasts (NRTF) as the NTM data is based on a more up-to-date model.
- 5.4 It should be noted that growth rates include allowances for background traffic growth as well as development growth and, in some instances, the application of growth rates and the addition of traffic flows from committed developments and cumulative developments (i.e. emerging developments that do not yet have planning consent) can result in double counting of traffic flows.
- 5.5 In this instance, given that a 2022 baseline year is being developed, any such effect of double counting will result in a robust scenario and no adjustments to the growth rates have been made. The growth rates are set out in **Table 5.1** and the 2022 base traffic flows are attached at **Appendix E**.

Operation

- 5.6 Although the first year of operation of the Uskmouth Power Station is 2022, the Newport Local Development Plan, adopted in January 2015, runs from 2011 to 2026. It sets out the land allocations for housing, employment and educational sites which could be considered as part of the committed and cumulative assessment. Therefore, as 2026 marks the end of the Local Plan, a future year of 2026 has been assessed.
- 5.7 The future year scenario of 2026 has been created by applying traffic growth rates to the observed traffic flows set out in Section 2, then adding in the traffic flows of 'committed developments' i.e. developments that have planning consent but are not yet generating traffic on the network.
- 5.8 Traffic growth rates have been estimated using the DfT software TEMPro (version 7.2). The TEMPro software presents the output of the DfT's National Trip End Model which forms part of

- the National Transport Model (NTM). The DfT’s Webtag guidance Unit 3.15.2 advises the use of NTM in preference to the National Road Traffic Forecasts (NRTF) as the NTM data is based on a more up-to-date model.
- 5.9 It should be noted that growth rates include allowances for background traffic growth as well as development growth and, in some instances, the application of growth rates and the addition of traffic flows from committed developments and cumulative developments (i.e. emerging developments that do not yet have planning consent) can result in double counting of traffic flows.
 - 5.10 In this instance, given that a 2026 baseline year is being developed, any such effect of double counting will result in a robust scenario and no adjustments to the growth rates have been made. The growth rates are set out in **Table 5.1** and the 2026 base traffic flows are attached at **Appendix F**.

Table 5.1: TEMPro Growth Rates

TEMPro Growth Rates		
Road Type	Growth Rate 2019-2022	Growth Rate 2019-2026
Urban Principal Road	1.0356	1.0779
Urban Minor Road	1.0366	1.081

Committed Developments

- 5.11 As part of the assessments, committed and cumulative development sites are also considered.
- 5.12 Developments that already have planning consent have already been through that process and have identified any highway and transport improvements that may or may not be necessary to mitigate their impact. There is no further opportunity for these developments to provide additional highway or transport mitigation and so these developments and their highway and transport schemes are treated as committed within any future year scenarios.
- 5.13 For this reason, those developments (traffic flows and their highway and transport mitigation schemes) form part of a future transport baseline scenario for any other developments that follow. In doing that, the impact of development proposals that follow consented developments is able to be determined in the knowledge of what has already been consented in transport and highways terms along with the need for any additional highway and transport improvements that may be necessary.
- 5.14 Other developments that emerge at the same time are treated together and are cumulatively assessed against the baseline scenario described above to determine their cumulative impact and their cumulative highway and transport mitigation requirements (if required).
- 5.15 A detailed assessment has been undertaken of all planning applications in the surrounding area and allocated sites following advice from planners at NCC. From a transport perspective, their status (i.e. consented, awaiting determination or allocated), traffic generation, their study area and the study area of this TA have all been analysed to determine how they have been considered within this TA, attached at **Appendix G**.

- 5.16 There are several land allocations within the vicinity of the Uskmouth Power Station development, including Meadows Road, which have not had any planning applications submitted, as summarised below:
- Land Allocation EM1(ii) submitted a screening opinion in August 2018 ((18/0601) for the erection of new concrete batching factory including hardstanding and associated infrastructure for manufacturing (Class B2), Storage and Distribution (Class B8); however, there has been no progression on this site;
 - Land Allocation EM1(iv) submitted an EIA screening opinion in February 2013 (13/0172) in for the erection of a "Therminol 3" production facility which was constructed in 2017, and there has been no additional progress on the site; and
 - H1(38) for 559 dwellings at Lysaghts Village was at 99% completion as set out in the Newport City Council Annual Monitoring Report 2018-2019; therefore, it is assumed that all dwellings are now constructed and occupied and are accounted for in the traffic surveys undertaken for this assessment.
- 5.17 There is one site which has planning consent that would generate traffic onto the study area of this TA that needs to be considered as a committed development and form part of the future year baseline scenario, set out in **Table 5.2**.

Table 5.2: Committed Sites Considered on the Network

Committed Developments				
Type of Application	Location	Description	Planning Reference	Status
Mixed Use	Former Llanwern Steelworks / Llanwern Regeneration Site	Outline planning application for 4000 housing units and 1.5m sqft employment land use, with local centre, playing fields, public open spaces and primary school provision	06/0471	Under construction

Llanwern Regeneration Site

- 5.18 In March 2006, an outline planning application (06/0471) for 4,000 housing units and 1.5million sqft (139,355 sqm) Gross Floor Area (GFA) employment land use, subdivided in to 15% office (BI), 25% general Industry (B2) and 60% warehousing (B8) was submitted. The development proposals also incorporated a local centre, playing fields, public open spaces and primary school provision to meet the development generated needs.
- 5.19 The outline planning application assumed a construction period of 2007 to 2027, with a proposed completion rate of 200 dwellings per year. The employment uses on the site were to follow a similarly linear completion rate at 50,000sqft per annum, with the rate increasing during the final phase of the development ensuring that all construction activity falls within the identified 20 year construction period.
- 5.20 The Newport City Council Annual Monitoring Report 2018-2019 stated that, as of April 2019, 559 dwellings had been completed equating to 14% of the total to be constructed. In October 2019, a reserved matter application was submitted (19/1074) in relation to plots 3B and 3D of

the Glan Llyn redevelopment to provide 203 houses. Additionally, in December 2019 a reserved matter application for 500 dwellings was submitted (19/1267) for the central section of the site (plots 3C and 4A).

- 5.21 As detailed in the outline planning application (06/0471) submitted in 2006, the phasing is as follows:
- Phase 1: 2007 to 2008 development of 250 residential units and 50,000sqft of employment to use within existing network capacity;
 - Phase 2: 2009 to 2012 development of a further 800 residential units and 200,000sqft of employment use, 10,000sqft of local retail space, 5,000sqft of commercial leisure, and Phase 1 of the local centre (community centre and nursery) with the first primary school;
 - Phase 3: 2013 to 2023 development of an additional 2200 residential units and 550,000sqft, 10,000sqft of local retail, 5000sqft of commercial leisure, phase 2 of local centre (surgery / mobile dentist / pharmacy / library, second primary school, hotel, health and fitness centre and petrol filling station);
 - Phase 4a: 2024 to 2027 development of the final 750 housing units and 700,000sqft of employment use. During this phase access to the east will be provided, along Queen's Way, from an eastern site access point, linked to the previously implemented western site access point via the internal estate roads. Between the two site access points Queen's Way will be retained in private ownership with barrier control allowing HGV access to the retained and proposed employment land; and
 - Phase 4b: As above including the implementation of the eastern extension of the SDR scheme. Under this scenario additional carriageway provision and reallocation of lane space at the improved Queensway Meadows and Nash Road roundabout junctions will be required. In addition, the existing Queensway Meadows / Meadows Road junction will incorporate a partial signalisation scheme featuring a segregated, eastbound, link between Queensway Meadows and Queen's Way. As indicated previously some of these improvement measures encroach beyond the current extent of public adopted highway.
- 5.22 The Llanwern Regeneration site assumed a liner progression in the development of employment land as part of the scheme, increasing during the final phase of development. However; based on the timeline set out within their Transport Assessment, the scheme is several years behind the scheduled phasing.
- 5.23 For the purposes of this assessment, it is assumed that as of 2020, 600 houses are currently constructed and occupied, based on the Newport City Council Annual Monitoring Report 2018-2019. The outline planning application assumed a construction rate of 200 dwellings per annum, which would equate to an additional 1400 dwellings being occupied and constructed between 2019 and 2026.
- 5.24 In total, there would be approximately 2000 dwellings constructed and occupied on the Llanwern Regeneration site as of 2026, equating to half of the scheme. With regard to employment land and other allocations within the site, for the purposes of the assessment it is also assumed that half of the regeneration scheme will have been built out by 2026.

- 5.25 Based on the above, for 2026 it is assumed that 35% of the Phase 4b development traffic flows derived from the outline planning applications Transport Assessment will be incorporated into the baseline traffic flows as a committed site, attached at **Appendix H**.
- 5.26 The future year traffic flows are attached at **Appendix I**. This accounts for the traffic flows for the 600 dwellings already constructed already being on the network, and the additional 1400 dwellings to be constructed accounting for 35% of the total 4000 dwellings to be constructed.

6 TRIP GENERATION, MODE SHARE AND ASSIGNMENT

Previous Site Operations

- 6.1 The Uskmouth B coal-fired power station previously generated operational HGV movements comprising of the export of ash from the coal combustion and the importing of operational consumables (reagents). These HGV movements were all generated along the only entry /egress point to Uskmouth Power Station which is along West Nash Road, Nash Road and Meadows Road.
- 6.2 There are no records available on the delivery of reagents and the number of daily HGV movements that were generated in association with this.
- 6.3 The total number of vehicle movements is the combination of all one-way directional vehicle movements (i.e. all arrivals plus all departures) therefore one HGV arriving and then departing would undertake two vehicle movements. Or, two HGV movements equates to one HGV arrival and one HGV departure.
- 6.4 Previous ash export data has been obtained from coal fired Uskmouth Power Station and analysed, as set out in **Table 6.1**. It should be noted that in both the below historical vehicle movements and the estimated vehicle movements for the Uskmouth Power Station (construction and operation), there are odd numbers for the daily vehicle movements. This is because the movements are rounded to represent an average day whereby some days may have slightly lower vehicle movements and some days might have slightly higher vehicle movements. Taking an average day may result in odd numbers whereby the total vehicle movements may not be an exact product of equal arrivals and departures. This is due to rounding.

Table 6.1: Previous Ash Daily HGV Movements

Previous HGV Movements					
	2010	2011	2012	2013	2014
Daily occasions when former facility exceeded 59 daily HGV movements	0	0	7	47	12
Max. number of daily HGV movements on any one day	48	34	78	120	114
Number of days when HGV movements were generated	178	36	171	225	31
Average number of daily HGV movements on days when HGVs were generated	12	19	23	36	49
Average number of daily HGV movements across the year	8	3	15	31	6

Note : HGV vehicle movements are total one-way directional vehicle movements (i.e. all arrivals plus all departures). Therefore one HGV arriving and then departing would undertake two vehicle movements

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- 6.5 It is noted that the 2011 data only included Ash movements during November and December and there were no Ash movements between January and October.
- 6.6 In terms of staff, RPS understands that there were 83 staff¹ employed at the former Uskmouth B coal-fired power station.
- 6.7 Based upon the above, it is clear that all operational HGV movements were previously generated along West Nash Road, Nash Road and Meadows Road during the lifetime of the Uskmouth B coal-fired power station. The Uskmouth B coal-fired power station has not generated electricity on coal since a technical fault in April 2017. However, during this time Uskmouth Power Station retained staff with critical skills for preservation and maintenance of the plant in readiness for return to service, Uskmouth Power Station has completed the removal of damaged equipment following the technical fault and Uskmouth Power Station has continued to make significant investment and progress with the Front End Engineering Design (FEED) to repurpose the existing site to combust waste derived fuel pellets.
- 6.8 The number of daily HGV Ash movements varied over the years. There were occasions when there were more daily HGV movements than would be generated by the proposed operational Uskmouth Conversion Project. Indeed, there were 66 occasions between 2010 and 2014 when the Uskmouth B coal-fired power station generated more daily HGV movements than the operational Uskmouth Conversion Project would generate. The maximum number of daily HGV movements was 120, which occurred in 2013.
- 6.9 Based upon all weekdays, when ash was exported, between 2010 and 2014 there was an average of 13 HGV movements per day. However, as set out above, there is a large variance to this with upper levels exceeding those to be generated by the operational Uskmouth Conversion Project.
- 6.10 It should be noted that these previous HGV movements are only those associated operation on coal and the export of ash. HGV movements associated with reagents need to be added to these, however, there are no records available to do so. The above therefore represents a reduced representation of the previous operational HGV movements generated by coal fired Uskmouth Power Station.
- 6.11 Due to a technical fault in April 2017, Uskmouth B coal-fired power station has not generated electricity on coal. To ensure a worst case scenario and to present a robust assessment, the net change in development traffic flows has not been assessed against previous year traffic flows; however, the above sets out that Uskmouth B coal-fired power station has previously generated HGV movements along West Nash Road and Nash Road without issue. The assessment of Uskmouth Conversion Project HGV movements as 'new' provides a worst-case scenario, rather than assessing the net change.

¹ <https://www.bbc.co.uk/news/uk-wales-south-east-wales-27344515>

Uskmouth Conversion Project Construction Flows

HGV Movements

- 6.12 The construction assessment is based on a reasonable worst case construction scenario which considers the construction of the Proposed Development and Power Station Upgrade to facilitate operation of the 220 MW Uskmouth Conversion Project. The construction phase occurs over 18 months including ground preparation for silo foundations and rail unloading facility. The Proposed Development is anticipated to utilise standard construction methodologies
- 6.13 . Construction traffic estimates have been made on this basis for a construction period of 18 months and this maximises the number of daily HGV movements and ensures a robust assessment.
- 6.14 A vehicle movement is a one-way directional movement by a vehicle. The total number of vehicle movements is the combination of all one-way directional vehicle movements. One HGV arriving and then departing would undertake two vehicle movements, one being the arrival and then one being the departure. This equates to two vehicle movements. Or, two HGV movements equates to 1 HGV arrival and 1 HGV departure.
- 6.15 It is anticipated that peak construction period, will occur in months 9 and 10 of an 18 month construction period, it is estimated there will be a maximum of 30 HGV movements per day generated by the construction at Uskmouth Conversion Project, as summarised in **Table 6.2** below:

Table 6.2: Anticipated peak logistical movements for construction

HGV Movements - Construction	
Load	Peak movements per day
HGV Movements for the Boiler Conversion	10
Concrete	18
Installations	2
Peak Daily HGV movements	30

Note : HGV vehicle movements are total one-way directional vehicle movements (i.e all arrivals plus all departures). Therefore one HGV arriving and then departing would undertake two vehicle movements

- 6.16 Over the course of the 18 month construction period, there would be an average of 15 HGV movements per day; however, there may be exceptional circumstances arising that require construction vehicles outside of the normal construction hours. Uskmouth Power Station intend to construct the storage silos using Slip-form technique, this construction is conducted continuously for the duration of the concrete pouring. The Conversion Contractor will specify

further detail and timings. This will be a one-off occurrence over a matter of days during the construction period, which is accordingly classified as a one-off occasion.

HGV Temporal Distribution - Construction

- 6.17 Based upon the above, the construction of Uskmouth Power Station will generate a maximum of 30 daily HGV movements. Indicative working hours for construction work will be undertaken within standard working hours would be 07:00 to 19:00 hours Monday to Friday, 07:00 to 13:00 hours on Saturday and at no time on Sundays or on public or bank holidays. Work outside these hours would be kept to a minimum, the local planning authority would be notified of any requirement to deviate from these indicative working hours.
- 6.18 The hourly HGV movements are shown in **Table 6.3**. Vehicle movements are representative of an average day.

Table 6.3: Hourly HGV Construction Traffic Flows

HGV Movements			
Hour Beginning	Arrivals	Departures	Total
07:00	0	0	0
08:00	2	2	3*
09:00	2	2	3*
10:00	2	2	3*
11:00	2	2	3*
12:00	2	2	3*
13:00	2	2	3*
14:00	2	2	3*
15:00	2	2	3*
16:00	2	2	3*
17:00	2	2	3*
18:00	0	0	0
Total	15*	15*	30*

Totals may not sum due to rounding
 Note : HGV vehicle movements are total one-way directional vehicle movements (i.e all arrivals plus all departures).
 Therefore one HGV arriving and then departing would undertake two vehicle movements

HGV Distribution and Assignment - Construction

- 6.19 It is expected that HGVs would route to and from the M4. For the purposes of construction, it is assumed that 50% route via the M4 east and the remaining 50% route via the M4 west.
- 6.20 All HGVs routing east on the M4 will route along the A4810 travelling east to junction 23A of the M4, and all HGVs travelling west on the M4 will route west of the A4810 / Meadows Road roundabout to the A48. Hour-by-hour construction HGV vehicle movements are summarised in **Appendix J**.

Construction Staff Movements

- 6.21 A peak of up to 157 staff vehicles are anticipated to be on site during the peak construction period, which coincides with the peak HGV movements through the 18-month construction period, occurring in months 9 and 10 of the 18-month construction period.

Construction Staff Movements Temporal Distribution

- 6.22 Hour-by-hour staff vehicle movements are summarised in **Table 6.4** and are representative of an average day.

Table 6.4: Hourly Staff Traffic Flows

Construction Staff Movements			
Hour Beginning	Arrivals	Departures	Total
07:00	157	0	157
08:00	0	0	0
09:00	0	0	0
10:00	0	0	0
11:00	0	0	0
12:00	0	0	0
13:00	0	0	0
14:00	0	0	0
15:00	0	0	0
16:00	0	0	0
17:00	0	0	0
18:00	0	157	157
Total	157	157	314

Note : HGV vehicle movements are total one-way directional vehicle movements (i.e all arrivals plus all departures). Therefore one HGV arriving and then departing would undertake two vehicle movements

Construction Staff Distribution and Assignment

- 6.23 Census 2011 Journey to Work data has formed the basis of the assumptions of construction staff vehicle routing. The analysis of the census data used to estimate the distribution of staff is summarised in **Table 6.5**.

Table 6.5: Staff Distribution

Staff Distribution - Construction			
Mode	Goldcliff Road South	A4810 East	A4810 West
Distribution	0.0%	27.2%	72.8%

- 6.24 Staff movements have been assigned onto the network in accordance with the above distribution and the resultant movement of staff cars along links throughout the day are set out in **Appendix K**.

Total Construction Traffic Flows

- 6.25 The resultant 2022 baseline plus construction traffic flows along links throughout the day are set out at **Appendix L**. Uskmouth Power Station construction traffic flows are summarised in **Table 6.6**.

Table 6.6: Daily Construction Traffic Flows

Summary of Daily Construction Vehicle Movements		
Link	Total	HGVs
West Nash Road – west of Nash village	344	30
West Nash Road – east of Nash village	344	30
Nash Road – between West Nash Road and Meadows Road junctions	344	30
Meadows Road – south of industrial park	344	30
Meadows Road – north of the industrial park	344	30
A4810 west of the Meadows Road Roundabout	244	15
A4810 Queens Way east of the Meadows Road junction	100	15

- 6.1 Note : HGV vehicle movements are total one-way directional vehicle movements (i.e all arrivals plus all departures).

- 6.2 Therefore one HGV arriving and then departing would undertake two vehicle movements

Uskmouth Conversion Project Operational Flows

Fuel Delivery - Rail

- 6.3 The operational Uskmouth Conversion Project seeks to replicate previous transport patterns, with all fuel pellets delivered by rail which replicates the previous coal deliveries by rail. Road delivery of fuel pellets would not be required under normal circumstances; however, road deliveries may be required following major incident on the rail line. Historically, rail deliveries have been very reliable with only 2 days un-planned rail network closure over the last 20 years. The proposed primary storage silos would contain up to 7 to 10 days' worth of fuel meaning that any potential future rail closures are likely to be accommodated by utilising fuel pellets stored on site without requiring further fuel pellet road deliveries.
- 6.4 Under some circumstances, rail disruption may be as a result of maintenance works to the rail line. However, this would occur on a planned basis, allowing fuel pellets to be stockpiled accordingly.

HGV Movements

Fuel Delivery – Biomass (First Year of Operation Only)

- 6.5 For technical and economic reasons, Uskmouth Power Station continues to investigate co-firing the fuel pellets with up to 1% biomass pellets. In the event that co-firing scenario proceeded an estimated 10,000tpa of biomass fuel may be initially required to co-fire along with the fuel pellets. In the event biomass is required, biomass fuel would be delivered by road replicating previous operational biomass deliveries to SUP . Even though the SUP will continue to investigate co-firing with biomass, it is likely to be commercially advantageous to fire with pellets only, therefore, the import of biomass is unlikely. Notwithstanding, the assessments have been undertaken assuming biomass is imported.

Limestone

- 6.6 Lime would be used in the flue-gas treatment (FGT) process. It is anticipated that approximately 52,000 tonnes per annum of lime (at 90% load factor) will be delivered to the site. The lime used in the FGT system is removed from site within the Air Pollution Control residue (APCr) composed of fly ash and FGT reaction products.

Ash

- 6.7 Combustion of the fuel pellets is expected to produce around 15% ash content by mass, similar in quantity to the ash production at the coal fired power station. The ash is composed of 80% fly ash and 20% furnace bottom ash (referred to as bottom ash).
- 6.8 Ash is a product of the combustion process of fuel pellets, the main solid residues produced by the operational Uskmouth Conversion Project are fly ash and bottom ash.
- 6.9 The majority of the ash produced (around 80%) is referred to as fly ash. Fly ash is captured within the bag filter system along with residue from the FGT system. The bag filter system is located within the main chimney stack. The fly ash is collected in a hopper and pneumatically

- conveyed into sealed road tankers for off-site disposal. SUP will endeavour where possible to recycle fly ash.
- 6.10 Around 20 % of the ash produced is referred to as Bottom Ash and is discharged from the boiler into the bottom ash handling system onto a series of conveyors for transportation to bottom ash storage, then into sealed road tankers for off-site disposal. Bottom Ash is commonly recycled and used by the aggregate industry. The majority of HGV movements generated from the SUP are attributed to the removal of ash.
 - 6.11 Around 174,236 tonnes Air Pollution Control residue (APCr) composed of fly ash and FGT consumables is produced per annum, APCr is discharged into sealed road tankers via a sealed connection and transported by road offsite for disposal.
 - 6.12 Around 30,747 tonnes of bottom ash is produced per annum. The nature of bottom ash handling systems following the SUP conversion will be determined during FEED and design phases of the EPC Uskmouth Conversion Project. It is anticipated bottom ash will be transported by road offsite for disposal resulting in around 153,738 tonnes per annum of ash to be removed from site by road for disposal (a fairly similar proportion to ash generated from coal combustion). The process results in 153,738.00 tpa of ash and when combined with the limestone used in the FGT process, this would equate to 204,984 tpa which would be removed by road.

Reagents

- 6.13 In addition to those raw materials listed above, it is anticipated the converted SUP facility will utilise; ammonium sulphate, urea and activated carbon for the flue gas treatment.
- 6.14 It is anticipated that around 2,430 tonnes per annum of Urea and 920 tonnes per annum of Ammonium Sulphate (at 90% load) would be required in the flue gas treatment process for each boiler.
- 6.15 The anticipated HGV movements to be generated are calculated at **Appendix M** and summarised in **Table 6.7**.

Table 6.7: Anticipated logistical movements (both boilers)

HGV Movements			
Load	Deliveries	Exports	Movements per day
HGV Movements of Energy Pellet Fuel Per Day	0	0	0
HGV Movements of Fuel Biomass Per Day (1st Year of Operation Only)	1	1	3*
HGV Movements of Ash & Limestone Per Day	27	27	54
HGV Other Movements Per Day	3	3	5
HGV Total Movements Per Day (No Fuel Biomass)	29	29	59*

*Totals may not sum due to rounding

Note : HGV vehicle movements are total one-way directional vehicle movements (i.e all arrivals plus all departures). Therefore one HGV arriving and then departing would undertake two vehicle movements

- 6.16 The estimates of daily HGV movements have been based upon an initial estimate of the calorific value (CV) of the waste input. Since these estimates were made, revised CVs are now expected. As a result, fewer daily HGV movements are expected, likely to be approximately 10% fewer. The assessments undertaken are based upon 62 HGV movements per day (including biomass in year 1), however, with the revised CV, this is likely to be in the region of 56 HGV movements per day (including biomass in year 1). Notwithstanding, 62 HGV movements per day (including biomass in year 1) has been assessed.

HGV Temporal Distribution

- 6.17 Estimates of the potential HGV movements are set out in **Table 6.7**. HGVs will operate between 08:00 and 18:00 Monday to Sunday, and the hourly HGV movements are shown in **Table 6.8**. The resultant turning of HGVs through junctions during the network peak and their movement along links throughout the day are attached at **Appendix N**.

Table 6.8: Temporal Distribution of HGVs

HGV Movements						
	Year 1 (including biomass deliveries)			Year 2 onwards		
Hour Beginning	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
07:00	0	0	0	0	0	0
08:00	6	6	6	6	6	6
09:00	6	6	6	6	6	6
10:00	6	6	6	6	6	6
11:00	6	6	6	6	6	6
12:00	6	6	6	6	6	6
13:00	6	6	6	6	6	6
14:00	6	6	6	6	6	6
15:00	6	6	6	6	6	6
16:00	6	6	6	6	6	6
17:00	6	6	6	6	6	6
18:00	0	0	0	0	0	0
Total	62*	62*	62*	59*	59*	59*

*Totals may not sum due to rounding

Note : HGV vehicle movements are total one-way directional vehicle movements (i.e all arrivals plus all departures).

Therefore one HGV arriving and then departing would undertake two vehicle movements

- 6.18 As aforementioned, vehicle movements represent an average day; therefore, vehicle movements are not an exact product of equal arrivals and departures.
- 6.19 Even though the SUP will continue to investigate co-firing with biomass, it is likely to be commercially advantageous to fire with pellets only, therefore, the import of biomass is unlikely. Notwithstanding, the assessments have been undertaken assuming biomass is imported.

HGV Distribution and Assignment

- 6.20 It is expected that HGVs would route to and from the M4. The majority of HGV movements generated from the SUP are attributed to the disposal of Incineration Bottom Ash (IBA) and limestone, equating to approximately 54 HGV movements per day.
- 6.21 Bottom Ash (is generated from the combustion process. This is a by-product of the incineration process and is classified as non-hazardous waste and BA is recognised as a resource which can be recycled into safe and useable aggregate products. What remains is a mixture of ash and secondary aggregate which is used in construction. The secondary aggregate is commonly used as bulk fill (areas that simply need filling with something), asphalt, cement bound materials, lightweight blocks (breeze blocks).
- 6.22 Bottom Ash needs to be processed before it can be recycled as materials for construction., There are several recycling and asphalt construction facilities located in Gloucestershire and Somerset, with more further afield. Based on the location of available recycling facilities, for the purposes of the assessment it is assumed that the majority of HGVs will route to / from the M4 east.
- 6.23 It is expected that all HGVs would route to and from the M4. Based on the location of available recycling facilities, it is assumed that the majority of HGVs will route to the M4 east of Newport.
- 6.24 For the purposes of this assessment, it is assumed that 75% of HGVs route to the east on the M4, with the remaining 25% routing west. All HGVs routing east on the M4 will route along the A4810 travelling east to junction 23A of the M4, and all HGVs travelling west on the M4 will route west of the A4810 / Meadows Road roundabout to the A48.

Operational Staff Movements

- 6.25 As aforementioned, the new operational organisation will have approximately 50 - 100 employees, with a net increase of 15 staff. It is anticipated SUP will utilise four operational shifts with an estimated 7 operational personnel per shift on twelve-hour days and nights, four on and four off, in addition to daytime staff, who have been retained from the SUP coal fired operation. The remaining staff as part of the new operational organisation will consist of daytime staff, being existing staff to be retained.

- 6.26 There would be 14 shift staff on site per day, consisting of two 12-hour shift teams each of seven staff working either 07:00 to 19:00, or 19:00 to 07:00. It is these staff that have been assumed as new staff.
- 6.27 The number of staff on site each day at the existing power station varies day to day: the traffic flows associated with the existing staff will have been counted within the traffic surveys undertaken and do not need to be added into the assessment.
- 6.28 To estimate the likely mode of transport that staff would use to travel to and from the site, the 2011 Census Journey to Work data has been analysed for the local area and is set out in **Table 6.9**. The site is located within Middle Layer Super Output Area (MSOA) 2011: W02000361: Newport 015.

Table 6.9: Census Method of Travel to Work

Method of Travel to Work	
Mode	Percentage
Underground, metro, light rail or tram	0.0%
Train	0.4%
Bus, minibus or coach	4.2%
Taxi	0.6%
Motorcycle, scooter or moped	1.2%
Driving a car or van	75.7%
Passenger in a car or van	8.2%
Bicycle	3.3%
On foot	6.0%
Other method of travel to work	0.3%
All Modes	100%

- 6.29 Much of MSOA Newport 015 to the north is residential and industrial, which can be accessed from Corporation Road and the A48. The site is located in the south of the MSOA and the access route to the site will result in a lower percentage of staff being able to access the site via sustainable means, relative to workplaces to the north. This is therefore unlikely to be representative of the site in terms of accessibility.
- 6.30 The census data demonstrates that some staff will travel via sustainable means; but for the purposes of the assessment, to enable a robust assessment it is assumed all staff travel to the site via single occupancy vehicle.

Staff Distribution and Assignment

- 6.31 Section 3 sets out that there would be 14 staff on site per day, consisting of two 12-hour shift teams each of seven staff working either 07:00 to 19:00, or 19:00 to 07:00.

- 6.32 Staff working 07:00 to 19:00 would arrive between 06:00 and 07:00 and depart between 19:00 and 20:00. Similarly, staff working 19:00 to 07:00 would arrive to the site between 18:00 and 19:00, departing between 07:00 and 08:00.
- 6.33 Census 2011 Journey to Work data has formed the basis of the assumptions of staff vehicle routeing. An analysis of the MSOAs in terms of mode share is set out above and the same MSOAs have been used to estimate the distribution of staff, as attached at **Appendix O** and as summarised in **Table 6.10**.

Table 6.10: Staff Distribution

Staff Distribution			
Mode	Goldcliff Road South	A4810 East	A4810 west
Distribution	0.0%	27.2%	72.8%

- 6.34 Staff movements have been assigned onto the network in accordance with the above distribution, and the link traffic flows are attached at **Appendix P**. The resultant 2026 baseline plus SUP operational traffic flows along links throughout the day are set out at **Appendix Q**.

Comparison of Uskmouth Conversion with Previous HGV Movements

- 6.35 As can be seen from the above and **Appendix M**, the vast majority of HGV movements are generated by the removal of ash. Ash would be stored on site and removed to a treatment / processing facility.
- 6.36 The number of daily HGV movements are calculated on the basis of the 7 day operations less eight bank holidays and are therefore the estimated number based upon a uniform export rate. The calculations therefore account for days when there will be no HGV movements.
- 6.37 Given the storage limitations on site together with the desire to treat / process the ash as quickly as possible rather than leave it in its untreated / unprocessed state, which may be hazardous, the ash will be exported as it is generated.
- 6.38 There is therefore limited opportunity for stockpiling of untreated / unprocessed ash on site, which could lead to variations in daily HGV movements as it is exported. Rather, the export of ash will be relatively uniform day-by-day.
- 6.39 For assessment purposes only, a day-to-day variance of approximately 10% to 20% has been assumed. This results in the HGV movements generated by SUP peaking at up to 65 to 71 daily HGV movements.
- 6.40 Table 6.1 set out details of the previous operational export of ash from coal fired Uskmouth Power Station, which, as set out above, is a reduced representation of the previous operational HGV movements generated by coal fired Uskmouth Power Station. Notwithstanding, it can be compared to the estimated HGV generation of Uskmouth Conversion Project for assessment purposes, as set out in Table 6.10.

Table 6.10: Comparison of Uskmouth Conversion and Previous Daily HGV Movements

HGV Movements	
	Max Daily HGV Movements
Uskmouth B (excluding reagents) (allowing for day-to-day variance)	120
SUP (allowing for day-to-day variance)	71
Net change	-49

Note : HGV vehicle movements are total one-way directional vehicle movements (i.e all arrivals plus all departures). Therefore one HGV arriving and then departing would undertake two vehicle movements

6.41 As can be seen, allowing for day-to-day variance, Uskmouth Power Station previously generated up to 49 more daily HGV movements that Uskmouth Conversion Project, which offers a betterment to previous traffic levels.

7 TRANSPORT ASSESSMENT

Introduction

- 7.1 To consider the effects of the traffic generated by SUP, an assessment of traffic flow increases has been undertaken. Additionally, an assessment of junction performance has been undertaken on the local junctions between the site access and the A4810.

SUP Construction Traffic Link Assessment

- 7.2 The SUP construction traffic flows have been assessed against the 2022 baseline annual average daily traffic (AADT) flows, as attached at **Appendix R** and summarised in **Table 7.1**.

Table 7.1: Link Impact Assessments

	Weekday Average			Saturday			Sunday		
	2022 Bline	Cons Traffic	% Impact	2022 Bline	Cons Traffic	% Impact	2022 Bline	Cons Traffic	% Impact
West Nash Road - west of Nash village									
12 hr (7am-7pm)	680	344	50.6%	595	344	57.8%	559	344	61.6%
24 hr	740	344	46.5%	630	344	54.6%	587	344	58.6%
West Nash Road - east of and inclusive of Nash village									
12 hr (7am-7pm)	914	344	37.6%	802	344	42.9%	737	344	46.7%
24 hr	1041	344	33.1%	893	344	38.5%	794	344	43.3%
Nash Road									
12 hr (7am-7pm)	1629	344	21.1%	1632	344	21.1%	1516	344	22.7%
24 hr	1904	344	18.1%	1924	344	17.9%	1706	344	20.2%
Meadows Road - South of Industrial Park									
12 hr (7am-7pm)	2170	344	15.9%	1505	344	22.9%	1151	344	29.9%
24 hr	2444	344	14.1%	1745	344	19.7%	1291	344	26.7%
Meadows Road - North of Industrial Park									
12 hr (7am-7pm)	6320	344	5.4%	3744	344	9.2%	2408	344	14.3%
24 hr	7373	344	4.7%	4339	344	7.9%	2678	344	12.8%
A4810 west of the Meadows Road Roundabout									
12 hr (7am-7pm)	18740	244	1.3%	12327	244	2.0%	10204	244	2.4%
24 hr	24118	244	1.0%	15447	244	1.6%	12790	244	1.9%

A4810 Queens Way east of the Meadows Road Roundabout

12 hr (7am-7pm)	13992	1	0.0%	8758	100	1.1%	7086	100	1.4%
24 hr	17895	100	0.6%	10997	100	0.9%	8910	100	1.1%

- 7.3 As can be seen in **Table 7.1**, the daily percentage increases in traffic along the highway as a result of the SUP construction on a weekday are in the order of 14.1% on Meadows Road to the south of the industrial estate, 18.1% on Nash Road and up to a maximum of 46.5% on West Nash Road.
- 7.4 As can be seen in **Table 7.1**, the daily percentage increases in traffic along the highway as a result of the SUP construction on a Saturday are in the order of 19.17% on Meadows Road to the south of the industrial estate, 17.9% on Nash Road and up to a maximum of 54.6% on West Nash Road.
- 7.5 On a Sunday, the daily percentage increases along the highway as a result of SUP construction are up to 26.7% on Meadows Road, 20.2% on Nash Road and up to 58.6% on West Nash Road.
- 7.6 It should be noted that the baseline traffic flows are low and it is this which results in the percentages increases calculated in **Table 7.1**. The baseline traffic flows are such that the increases are not considered to result in any highway safety or capacity issues. Notwithstanding, operational assessments have been undertaken below to determine the effect of the SUP construction traffic upon the performance of junctions.

SUP Construction Traffic Operational Assessments

- 7.7 Operational assessments have been undertaken using the Junctions 9 computer modelling suite at the following junctions:
 - West Nash Road / Nash Road / Goldcliff Road priority junction;
 - Meadows Road / Nash Road priority junction; and
 - Meadows Road / A4810 Queensway Meadows / Longditch Road roundabout.
- 7.8 These have been undertaken for the following scenarios:
 - 2019 observed;
 - 2022 baseline; and
 - 2022 baseline plus construction.
- 7.9 The construction staff are predicted to arrive on site during the hour before 08:00 and depart during the hour after 18:00. With the addition of these movements, the network baseline plus construction hourly traffic flows between 07:00 and 08:00 exceeds those of the network AM peak hour. The network baseline plus construction hourly traffic flows between 18:00 and 19:00 does not exceed the network PM peak hour of 17:00 to 18:00, therefore, the PM peak hour remains the assessment hour for this period.

- 7.10 The operational assessments of the construction traffic have therefore been undertaken during the 07:00 to 08:00 construction AM peak hour and 17:00 to 18:00 network PM peak hour. The traffic flow diagrams are attached at **Appendix S**.
- 7.11 The outputs of the operational assessments are the Ratio of Flow to Capacity (RFC) and queue length. The RFC is an assessment of traffic demand for a traffic movement against its theoretical capacity, whereby an RFC of 1.0 indicates traffic demand is equal to its theoretical capacity.

Operational Assessment at West Nash Road / Nash Road / Goldcliff Road junction

- 7.12 A summary of the operational assessments undertaken at the West Nash Road / Nash Road / Goldcliff Road priority junction are set out in **Table 7.2** with full print outs attached at **Appendix T**.

Table 7.2: Summary of West Nash Road / Nash Road / Goldcliff Road Junction Capacity Assessment

Arm	2019 Observed				2022 Baseline				2022 Baseline + Construction			
	Construction AM Peak Hour		PM Peak Hour		Construction AM Peak Hour		PM Peak Hour		Construction AM Peak Hour		PM Peak Hour	
	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
West Nash Road	0.04	0.0	0.08	0.1	0.04	0.0	0.09	0.1	0.05	0.1	0.10	0.1
Nash Road	0.07	0.1	0.03	0.0	0.08	0.1	0.04	0.0	0.08	0.1	0.05	0.1

- 7.13 The assessments show that the Nash Road junction currently operates well within its operational capacity with a maximum RFC of 0.07 occurring on Nash Road during the AM peak hour with no associated queue length. During the PM peak hour, a maximum RFC of 0.08 occurs on West Nash Road with no associated queue length.
- 7.14 In the 2022 Baseline scenario, the junction is predicted to remain operating well within its operational capacity with a maximum RFC of 0.08 predicted on Nash Road during the AM peak hour with no associated queue length. During the PM peak hour, a maximum RFC of 0.09 is predicted on West Nash Road with no associated queue length.
- 7.15 Following the addition of SUP construction traffic in 2022, the junction is predicted to remain operating well within its operational capacity with a maximum RFC of 0.08 predicted on Nash Road during the AM peak hour with no associated queue length. During the PM peak hour, a maximum RFC of 0.10 is predicted on West Nash Road with no associated queue length.

Operational Assessments at Nash Road / Meadows Road Priority Junction

- 7.16 A summary of the operational assessments undertaken at the Meadows Road / Nash Road priority junction are set out in **Table 7.3** with full print outs attached at **Appendix U**.

Table 7.3: Summary of Nash Road / Meadows Road Junction Capacity Assessment

Stream	2019 Observed				2022 Baseline				2022 Baseline + Construction			
	Construction AM Peak Hour		PM Peak Hour		Construction AM Peak Hour		PM Peak Hour		Construction AM Peak Hour		PM Peak Hour	
	RF C	Queue	RFC	Queue	RF C	Queue	RF C	Queue	RF C	Queue	RFC	Queue
Nash Road to Meadows Road	0.0	0.1	0.08	0.1	0.06	0.1	0.08	0.1	0.6	0.1	0.08	0.1
Nash Road to Nash Road (south)	0.0	0.1	0.09	0.1	0.10	0.1	0.10	0.1	0.1	0.1	0.10	0.1
Nash Road (south) to Meadows Road	0.0	0.1	0.10	0.1	0.09	0.1	0.10	0.1	0.1	0.2	0.10	0.1

- 7.17 The assessments show that the junction currently operates well within its operational capacity with a maximum RFC of 0.09 occurring on Nash Road and Nash Road (south) during the AM peak hour with no associated queue length. During the PM peak hour, a maximum RFC of 0.10 occurs on Nash Road (south) with no associated queue length.
- 7.18 In the 2022 Baseline scenario, the junction is predicted to remain operating well within its operational capacity with a maximum RFC of 0.10 predicted on Nash during the AM peak hour with no associated queue length. During the PM peak hour, a maximum RFC of 0.10 is predicted on Nash Road and Nash Road (south) with no associated queue length.
- 7.19 Following the addition of SUP construction traffic in 2022, the junction is predicted to remain operating well within its operational capacity with a maximum RFC of 0.11 predicted on Nash Road during the AM peak hour with no associated queue length. During the PM peak hour, a maximum RFC of 0.10 is predicted on Nash Road and Nash Road (south) with no associated queue length.

Operational Assessment at A4810 Queensway Meadows / Meadows Road Roundabout Junction

- 7.20 A summary of the operational assessments undertaken at the Meadows Road / A4810 Queensway Meadows roundabout are set out in **Table 7.4** and attached at **Appendix V**.

Table 7.4: Summary of Meadows Road / A4810 Queensway Meadows Junction Capacity Assessment

Stream	2019 Observed				2022 Baseline				2022 Baseline + Construction			
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	Construction AM Peak Hour				PM Peak Hour				Construction AM Peak Hour			
	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
A4810 East	0.31	0.4	0.39	0.6	0.37	0.6	0.45	0.8	0.41	0.7	0.45	0.8
Longditch Road	0.05	0.1	0.11	0.1	0.06	0.1	0.13	0.2	0.06	0.1	0.13	0.2
Meadows Road	0.11	0.1	0.20	0.3	0.13	0.1	0.23	0.3	0.13	0.1	0.23	0.3
A4810 West	0.36	0.6	0.29	0.4	0.42	0.7	0.34	0.5	0.46	0.9	0.34	0.5

- 7.21 The assessments show that the junction currently operates well within its operational capacity with a maximum RFC of 0.36 occurring on the A4810 West during the AM peak hour with an associated queue length of one vehicle. During the PM peak hour, a maximum RFC of 0.39 occurs on the A4810 East with an associated queue length of one vehicle.
- 7.22 In the 2022 Baseline scenario, the junction is predicted to remain operating well within its operational capacity with a maximum RFC of 0.42 predicted on the A4810 West during the AM peak hour with a queue length of one vehicle. During the PM peak hour, a maximum RFC of 0.45 is predicted on the A4810 East with an associated queue length of one vehicle.
- 7.23 Following the addition of SUP construction traffic, in 2022 the junction is predicted to remain operating well within its operational capacity with a maximum RFC of 0.46 predicted on the A4810 West during the AM peak hour with an associated queue length of one vehicle. During the PM peak hour, a maximum RFC of 0.45 is predicted on the A4810 East with an associated queue length of one vehicle.

Construction Cumulative Assessment

- 7.24 Section 5 provides details on committed and cumulative development with a list of sites attached at **Appendix G**.
- 7.25 There are no cumulative sites which have been considered as part of this assessment, as there are no active planning applications on nearby employment and housing land allocations set out within the Local Plan which have not been considered as part of the committed applications.

Traffic Link Assessment

- 7.26 The SUP operational traffic flows have been assessed against the 2026 baseline traffic flows as attached at **Appendix W** and summarised in **Table 7.5**. Whilst in 2026, the SUP will be generating 59 HGV movements per day, the opening year of 62 HGV movements per day has been assessed against the baseline scenario to provide a robust assessment.

Table 7.5: Link Impact Assessments

	Weekday Average		
	2026 Baseline	Dev Traffic	% Impact

West Nash Road - west of Nash village

AM peak hour	64	6	9.6%
PM peak hour	46	6	13.4%
12 hr (7am-7pm)	709	76	10.7%
24 hr	771	90	11.7%

West Nash Road - east of Nash village

AM peak hour	88	6	7.1%
PM peak hour	69	6	8.9%
12 hr (7am-7pm)	953	76	8.0%
24 hr	1085	90	8.3%

Nash Road

AM peak hour	145	6	4.3%
PM peak hour	128	6	4.8%
12 hr (7am-7pm)	1698	76	4.5%
24 hr	1985	90	4.5%

Meadows Road - South of Industrial Park

AM peak hour	206	6	3.0%
PM peak hour	190	6	3.2%
12 hr (7am-7pm)	2262	76	3.4%
24 hr	2548	90	3.5%

Meadows Road - North of Industrial Park

AM peak hour	641	6	1.0%
PM peak hour	573	6	1.1%
12 hr (7am-7pm)	6588	76	1.2%
24 hr	7685	90	1.2%

A4810 west of the Meadows Road Roundabout

AM peak hour	1974	2	0.1%
PM peak hour	1898	2	0.1%
12 hr (7am-7pm)	22558	26	0.1%
24 hr	29007	36	0.1%

A4810 Queens Way east of the Meadows Road Roundabout

AM peak hour	1423	5	0.3%
PM peak hour	1879	5	0.2%
12 hr (7am-7pm)	17534	1	0.0%
24 hr	22426	54	0.2%

7.27 As can be seen, the weekday percentage increases in traffic along the highway as a result of the SUP are in the order of 3% on Meadows Road and up to a maximum of 13% on West Nash Road. On a Saturday, the weekday percentage increases along the highway as a result of

SUP are in the order of 5% on Meadows Road and of 13% on West Nash Road. On a Sunday, the weekday percentage increases along the highway as a result of SUP are in the order of 6% on Meadows Road and of 14% on West Nash Road.

7.28 It should be noted that the baseline traffic flows are low and it is this which results in the percentages increases calculated in **Table 7.1**. The baseline traffic flows are such that the increases are not considered to result in any highway safety or capacity issues. Notwithstanding, operational assessments have been undertaken below to determine the effect of the SUP traffic upon the performance of junctions.

SUP Operational Assessments

7.29 Operational assessments have been undertaken for the weekday AM and PM peak hours using the Junctions 9 computer modelling suite at the following junctions:

- West Nash Road / Nash Road / Goldcliff Road priority junction;
- Meadows Road / Nash Road priority junction; and
- Meadows Road / A4810 Queensway Meadows / Longditch Road roundabout.

7.30 These have been undertaken for the following scenarios:

- 2019 observed;
- 2026 baseline; and
- 2026 baseline plus development.

7.31 The outputs of the operational assessments are the Ratio of Flow to Capacity (RFC) and queue length. The RFC is an assessment of traffic demand for a traffic movement against its theoretical capacity, whereby an RFC of 1.0 indicates traffic demand is equal to its theoretical capacity.

Operational Assessment at West Nash Road / Nash Road / Goldcliff Road junction

7.32 A summary of the operational assessments undertaken at the West Nash Road / Nash Road / Goldcliff Road priority junction are set out in **Table 7.6** with full print outs attached at **Appendix X**.

Table 7.6: Summary of West Nash Road / Nash Road / Goldcliff Road Junction Capacity Assessment

Arm	2019 Observed				2026 Baseline				2026 Baseline + Development			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue

West Nash Road	0.04	0.0	0.08	0.1	0.04	0.0	0.0	0.1	0.05	0.1	0.10	0.1
Nash Road	0.07	0.1	0.03	0.0	0.08	0.1	0.0	0.0	0.08	0.1	0.05	0.1

- 7.33 The assessments show that the Nash Road junction currently operates well within its operational capacity with a maximum RFC of 0.07 occurring on Nash Road during the AM peak hour with no associated queue length. During the PM peak hour, a maximum RFC of 0.08 occurs on West Nash Road with no associated queue length.
- 7.34 In the 2026 Baseline scenario, the junction is predicted to remain operating well within its operational capacity with a maximum RFC of 0.08 predicted on Nash Road during the AM peak hour with no associated queue length. During the PM peak hour, a maximum RFC of 0.09 is predicted on West Nash Road with no associated queue length.
- 7.35 Following the addition of SUP traffic in 2026, the junction is predicted to remain operating well within its operational capacity with a maximum RFC of 0.08 predicted on Nash Road during the AM peak hour with no associated queue length. During the PM peak hour, a maximum RFC of 0.10 is predicted on West Nash Road with no associated queue length.

Operational Assessments at Nash Road / Meadows Road Priority Junction

- 7.36 A summary of the operational assessments undertaken at the Meadows Road / Nash Road priority junction are set out in **Table 7.7** with full print outs attached at **Appendix Y**.

Table 7.7: Summary of Nash Road / Meadows Road Junction Capacity Assessment

Stream	2019 Observed				2026 Baseline				2026 Baseline + Development			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	RF C	Queue	RFC	Queue	RFC	Queue	RFC	Queue	RF C	Queue	RFC	Queue
Nash Road to Meadows Road	0.0	0.1	0.08	0.1	0.07	0.1	0.08	0.1	0.0	0.1	0.08	0.1
Nash Road to Nash Road (south)	0.0	0.1	0.09	0.1	0.10	0.1	0.10	0.1	0.1	0.1	0.10	0.1
Nash Road (south) to Meadows Road	0.0	0.1	0.10	0.1	0.09	0.1	0.10	0.1	0.0	0.1	0.11	0.1

- 7.37 The assessments show that the junction currently operates well within its operational capacity with a maximum RFC of 0.09 occurring on Nash Road and Nash Road (south) during the AM peak hour with no associated queue length. During the PM peak hour, a maximum RFC of 0.10 occurs on Nash Road (south) with no associated queue length.

- 7.38 In the 2026 Baseline scenario, the junction is predicted to remain operating well within its operational capacity with a maximum RFC of 0.10 predicted on Nash during the AM peak hour with no associated queue length. During the PM peak hour, a maximum RFC of 0.10 is predicted on Nash Road and Nash Road (south) with no associated queue length.
- 7.39 Following the addition of SUP traffic in 2026, the junction is predicted to remain operating well within its operational capacity with a maximum RFC of 0.10 predicted on Nash Road during the AM peak hour with no associated queue length. During the PM peak hour, a maximum RFC of 0.11 is predicted on Nash Road (south) with no associated queue length.

Operational Assessment at A4810 Queensway Meadows / Meadows Road Roundabout Junction

- 7.40 A summary of the operational assessments undertaken at the Meadows Road / A4810 Queensway Meadows roundabout are set out in **Table 7.8** and attached at **Appendix Z**.

Table 7.8: Summary of Meadows Road / A4810 Queensway Meadows Junction Capacity Assessment

Stream	2019 Observed				2026 Baseline				2026 Baseline + Development			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	RF C	Queue	RFC	Queue	RFC	Queue	RF C	Queue	RF C	Queue	RFC	Queue
A4810 East	0.31	0.4	0.39	0.6	0.46	0.9	0.52	1.1	0.46	0.9	0.52	1.1
Longditch Road	0.05	0.1	0.11	0.1	0.07	0.1	0.17	0.2	0.07	0.1	0.17	0.2
Meadows Road	0.11	0.1	0.20	0.3	0.14	0.2	0.26	0.4	0.15	0.2	0.27	0.4
A4810 West	0.36	0.5	0.29	0.4	0.49	1.0	0.41	0.7	0.49	1.0	0.41	0.7

- 7.41 The assessments show that the junction currently operates well within its operational capacity with a maximum RFC of 0.36 occurring on the A4810 West during the AM peak hour with an associated queue of one vehicle. During the PM peak hour, a maximum RFC of 0.39 occurs on the A4810 East with an associated queue length of one vehicle.
- 7.42 In the 2026 Baseline scenario, the junction is predicted to remain operating well within its operational capacity with a maximum RFC of 0.49 predicted on the A4810 West during the AM peak hour with an associated queue length of one vehicle. During the PM peak hour, a maximum RFC of 0.52 is predicted on the A4810 East with an associated queue length of one vehicle.
- 7.43 Following the addition of SUP traffic, in 2026 the junction is predicted to remain operating well within its operational capacity with a maximum RFC of 0.49 predicted on the A4810 West

during the AM peak hour with an associated queue length of one vehicle. During the PM peak hour, a maximum RFC of 0.52 is predicted on the A4810 East with an associated queue length of one vehicle.

Cumulative Assessment

- 7.44 Section 5 provides details on committed and cumulative development with a list of sites attached at **Appendix G**.
- 7.45 There are no cumulative sites which have been considered as part of this assessment, as there are no active planning applications on nearby employment and housing land allocations set out within the Local Plan which have not been considered as part of the committed applications.

Summary

- 7.46 The operational assessments set out in this section demonstrate that the impacts of the operational Uskmouth Conversion Project are negligible during the AM and PM peak hours. The junction assessments demonstrate that they operate well within capacity and will continue to do so with the addition of SUP.
- 7.47 The operational assessments set out that the impact of the operational Uskmouth Conversion Project will be negligible on the operation of the junctions on the adjacent highway network. Furthermore, the analysis of the Personal Injury Accident data presented in Section 2 identifies that there are no significant existing road safety issues along the adjacent highway network, and the addition of operational Uskmouth Conversion Project traffic will not impact on road safety.

8 TRANSPORT IMPLEMENTATION STRATEGY

Sustainable Transport Measures and Objectives

- 8.1 The transport aspects of the development proposals have been developed to minimise the potential transport impacts that may arise from the development with due regard taken to the surroundings and historic use of the site, as set out below.

Rail Delivery

- 8.2 The operational Uskmouth Conversion Project seeks to replicate previous transport patterns, with all fuel pellets delivered by rail which replicates the previous coal delivery by rail. No fuel pellets will be delivered by road, unless for exceptional circumstances when the rail network is unavailable. This results in the majority of transport requirements for the operational Uskmouth Conversion Project being diverted away from the highway network.
- 8.3 The only transport movements undertaken on the road network will be the delivery of reagents, the exporting of ash and staff movements.
- 8.4 This mirrors the delivery strategy for the Uskmouth B coal-fired Power Station whereby all coal feed was delivered by rail and only reagents and ash were transported by road.
- 8.5 Thus, the proposals have sought to maximise sustainable modes of transport and in doing so minimise the potential transport impacts that may arise from the development.

Working Days

- 8.6 The operational Uskmouth Conversion Project intends to adopt a 24/7 working regime, however, HGV movements will not be generated on the same basis and night time deliveries will be avoided where practicable.
- 8.7 It is proposed that the HGV movements will be on a seven day per week basis to spread the movement of HGVs and thus minimise the daily number of HGV movements. This minimises the hourly rate of HGV movements and thus minimises the impact on the local highway network.

Access Route

- 8.8 The proposed vehicular access route is the same as that which was used for the Uskmouth coal-fired power station since the 1960s. Uskmouth Power Station generated vehicle movements on a daily basis, including HGVs, and operational Uskmouth Conversion Project build upon that to continue to use this route, the only road access to Uskmouth Power Station.
- 8.9 This means that the vehicle movements, including HGV movements, are not 'new' to the local highway network but are an extension of previous operational vehicle movements.

Staff

- 8.10 Uskmouth Conversion Project will retain existing staff on site as far as possible. This will continue the employment of staff on site who are already familiar with the site, its surroundings and local environs and can continue their movement in a familiar fashion.

On-Site Provision

- 8.11 Car parking within the site will reuse existing on-site parking provision and thus will not require the provision of new car parking areas. All car parking will be separate from the main site areas where there will be HGV movements. All car parking will also be separated from pedestrian routes to minimise conflicts.

Development Compliance

- 8.12 The development will be in general compliance with the policies, plans, notes and acts set out in Section 4.
- 8.13 The applicant is committed to using the rail network for the delivery of all fuel pellets by designing the site accordingly and including for storage areas for entire train deliveries.
- 8.14 If the development is granted consent and the applicant wishes to alter the delivery strategy such that it would result in an increase in HGV movements (for example, by seeking a proportion of fuel pellets to arrive by HGV instead of by rail), then a further application would need to be made to permit any such alterations.
- 8.15 The Uskmouth Power Station only has one access route on which vehicle movements can travel to / from the Uskmouth Power Station. The Uskmouth Conversion Project requires continued use of this access route and 'new' movements are not generated onto other parts of the local highway network.

Summary

- 8.16 The development complies with the National and Local policies and provides a suitable Transport Implementation Strategy.

9 SUMMARY AND CONCLUSIONS

- 9.1 This Transport Assessment (TA) has been prepared by RPS on behalf of Simec Uskmouth Power Ltd to support a planning application for a Proposed Development at West Nash Road, Newport. This TA assesses the transport implications of the Proposed Development that will together with the Power Station Upgrade facilitate the delivery of the operational phase of the Uskmouth Conversion Project and forms an appendix to the Environmental Statement submitted in support of the planning application. This TA has been prepared in accordance with discussions with Highway Officers at Newport City Council and in accordance with recognised guidance and best practice documents
- 9.2 The Proposed Development site is located on the eastern bank of the River Usk, close to the confluence with the Severn Estuary, around 4 km south of central Newport.
- 9.3 Uskmouth Power Station was historically made up of two power plants; Uskmouth A (decommissioned in 1990's), and Uskmouth B. The proposed development would be implemented entirely within the site of the existing Uskmouth B coal-fired power station, referred to as Uskmouth Power Station.
- 9.4 It is anticipated that the operational Uskmouth Conversion Project will have approximately 50 - 100 employees,. It is anticipated that the operational Uskmouth Power Station will utilise four operational shifts with an estimated 7 operational personnel per shift on twelve-hour days and nights, four on and four off. The remaining staff as part of the new operational organisation will consist of daytime staff, in who have been retained from the previous coal fired operation.
- 9.5 The expected operational regime will consist of four operational shifts with 7 operational personnel per shift on twelve-hour days and nights, four on and four off. Parking for staff will be provided within the existing parking available to staff currently employed at the site
- 9.6 The operational Uskmouth Conversion Project will result in a total of up to 90 vehicle movements on a weekday, Saturday and Sunday in its first year of operation, reducing to a maximum of 87 vehicle movements from its second year of operation onwards.
- 9.7 Traffic generated by the operational Uskmouth Conversion Project would utilise the same access route as presently used for operational traffic to and from Uskmouth Power Station since the 1960s.
- 9.8 The traffic assessments show that the local highway network operates well within capacity and would continue to do so with the addition of the construction and operational phase of Uskmouth Conversion Project that there are no current road safety issues and that there would be no significant impacts arising from the Uskmouth Power Station
- 9.9 It is therefore concluded that there are no transport or highways related reasons for not permitting the Uskmouth Conversion Project .

Figures

Figure 1 – Site Location Plan

Appendices

Appendix A – 2019 Automatic Traffic Count Data

Appendix B – 2019 Manual Classified Count Data

Appendix C – 2019 Hourly Link Traffic Flows

Appendix D – Cycle Routes

Appendix E – 2022 Base Traffic Flows

Appendix F – 2026 Base Traffic Flows

Appendix G – Committed Sites

Appendix H – Committed Traffic Flows

Appendix I – Future Year Traffic Flows

Appendix J – Uskmouth Conversion Project Construction Two-Way HGV Flow Calculations

Appendix K – Construction Staff Movements

Appendix L – 2022 Baseline + Construction

Appendix M – HGV Generation (operation)

Appendix N – Operational HGV Hourly Flows

Appendix O – Staff Distribution

Appendix P – Operational Staff Hourly Flows

Appendix Q – 2026 Baseline + Operation

Appendix R – Construction Traffic Link Impact Assessment

Appendix S – Traffic Flow Diagrams

Appendix T – West Nash Road / Nash Road Priority Junction Assessment (construction)

Appendix U – Nash Road / Meadows Road Priority Junction Assessment (construction)

Appendix V – Meadows Road / A4810 Queensway Meadows Junction Assessment (construction)

Appendix W – Operational Traffic Link Impact Assessment

Appendix X – West Nash Road / Nash Road Priority Junction Assessment (operation)

Appendix Y – Nash Road / Meadows Road Priority Junction Assessment (operation)

Appendix Z – Meadows Road / A4810 Queensway Meadows Junction Assessment (operation)