



DEVELOPMENT OF A SUSTAINABLE ENERGY PLANT.

KEMSLEY PAPER MILL, KEMSLEY

**ST REGIS PAPER COMPANY LIMITED & E.ON
ENERGY FROM WASTE UK LIMITED**

ENVIRONMENTAL STATEMENT

CHAPTER 6:

TRAFFIC AND TRANSPORT

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6 Traffic and Transport

6.1 Introduction

- 6.1.1 This chapter of the ES assesses the likely significant impacts of the Proposed Development in terms of Traffic and Transportation and is accompanied by Appendix 6.1 that contains a Transport Assessment (TA) dealing with a number of access, transport and highways issues relating to the proposed development. Relevant figures and appendices are referred to within the TA.
- 6.1.2 The chapter describes the assessment methodology; the baseline conditions currently existing at the application site and surroundings; the likely significant environmental impacts; the mitigation measures required to prevent, reduce or offset any significant adverse impacts and the likely residual effects after these mitigation measures have been employed. This chapter has been prepared by RPS Planning and Development.

6.2 Legislation and Planning Context

- 6.2.1 A detailed review of the Development Plan documents and planning context in relation to the development proposals is provided in Chapter 3.
- 6.2.2 This section identifies those policies that are directly relevant to traffic and transportation issues. An expanded version of this section is attached as Appendix 6.2.

National Policy and Legislation

Planning Policy Guidance Note 13 (PPG13)

- 6.2.3 National policy on transport is set out in PPG13, Transport. The objectives of this guidance are to integrate planning and transport at the national, regional and local level to:
- Promote more sustainable transport choices for both people and for moving freight.
 - Promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling.
 - Reduce the need to travel, especially by car.

6.2.4 With specific reference to freight, PPG13 acknowledges that road transport is likely to remain the main mode for many freight movements and recognises that land use planning can help to promote sustainable distribution, including where feasible, the movement of freight by rail. In this context it advises that, in preparing their development plans and in determining planning applications, local authorities should:

- identify and, where appropriate, protect sites and routes, both existing and potential, which could be critical in developing infrastructure for the movement of freight (such as major freight interchanges including facilities allowing road to rail transfer or for water transport) and ensure that any such disused transport sites and routes are not unnecessarily severed by new developments or transport infrastructure;
- where possible, locate developments generating substantial freight movements such as distribution and warehousing, particularly of bulk goods, away from congested central areas and residential areas, and ensure adequate access to trunk roads;
- promote opportunities for freight generating development to be served by rail or waterways by influencing the location of development and by identifying and where appropriate protecting realistic opportunities for rail or waterway connections to existing manufacturing, distribution and warehousing sites adjacent or close to the rail network, waterways or coastal/estuarial ports.

6.2.5 Where developments are likely to have significant transport implications, PPG13 requires Transport Assessments to be prepared and submitted alongside the relevant applications for development.

Planning Policy Statement 10 (PPS10): Planning for Sustainable Waste Management PPS10, July 2005, and Companion Guide, June 2006

6.2.6 PPS 10 notes that one of the criteria to be considered by waste planning authorities in deciding which sites and areas to identify for waste management facilities is the capacity of existing and potential transport infrastructure to support the sustainable movement of waste, and products arising from resource recovery, seeking when practicable and beneficial to use modes other than road transport.

6.2.7 Annex E sets out the locational criteria to be used in testing the suitability of sites and areas which include consideration of the suitability of the road network and the extent to which access would require reliance on local roads.

Regional and Local Policy and Legislation

Regional Spatial Strategy for South East England

6.2.8 The South East Plan, adopted in May 2009, forms the Regional Spatial Strategy (RSS) for the South East region and provides a framework for investment and development within the South East region until 2026. The Plan aims to achieve more sustainable development across the region and will guide the direction of development and the function that different localities will assume, with the aim of balancing economic and housing growth with concerns regarding environmental protection and climate change.

6.2.9 Transport infrastructure is a significant influence in the growth and development of a region and as such a Regional Transport Strategy (RTS) has been established within the South East Plan. The RTS provides the context within which other relevant regional transport strategies should be developed. It also provides the context within which Local Transport Authorities should produce their Local Transport Plans.

6.2.10 The following policy in the RTS relates to transport:

- Policy T1: Reduction of Average Journey Lengths

County Policy and Legislation

6.2.11 Local policy is set out in Kent's second Local Transport Plan 2006-2011, the Swale Borough Council Local Plan 2008-2021 and the Kent Adopted Waste Local Plan. The following policies relate specifically to transport:

Kent's second Local Transport Plan 2006-2011

- Policy UKG2: Road Freight

Swale Borough Council Local Plan 2008- 2021 (to be replaced by Local Development Framework)

- Policy SP1: Sustainable Development
- Policy SP6: Transport and Utilities

Kent Adopted Waste Local Plan

- Policy W11 – Waste to Energy by Incineration

6.3 Assessment Methodology**Relevant Guidance**

6.3.1 As a matter of best practice, this assessment has been undertaken based on the relevant guidance on traffic and transportation assessment. This includes:

[1] Guidance Notes No. 1. Guidelines for the Environmental Assessment of Road Traffic. The Institute of Environmental Assessment, March 1993.

[2] The Design Manual for Roads and Bridges. Volume 11 – Environmental Assessment. Department of Transport et.al. June 1993 (and updates).

6.3.2 The IEA Guidelines (Ref. [1]) provide guidance on the geographical extent of environmental assessment which is likely to prove necessary in relation to increases in traffic flow as follows:

“Rule 1: include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%);

Rule 2: include any other specifically sensitive areas where traffic flows have increased by 10% or more.”

6.3.3 In accordance with the above guidance, this assessment of the environmental effects of traffic is considered for the following criteria:

- Severance
- Driver Delay
- Pedestrian Delay
- Pedestrian Amenity
- Accidents & Safety
- Hazardous Loads
- Dust & Dirt

- 6.3.4 Part of the assessments included a detailed site inspection of the road network surrounding the site with details of the current geometric layout of the highway, traffic management and regulation orders and general observations of existing road user movements.
- 6.3.5 Other environmental effects of traffic including air quality and visual impact are considered in other chapters.

Consultations

- 6.3.6 As detailed in Chapter 1, a formal scoping exercise has been undertaken to inform the scope of the Environmental Assessment. The formal Scoping response is included at Appendix 1.2. The following extract from the official Screening Opinion of the County Council (24 July 2009) identifies transportation issues:

“The potential impact on the road network will need to be addressed in terms of the existing capacity available and whether the anticipated vehicle movements to and from the site can be satisfactorily accommodated. Notwithstanding the improvements planned for extending the Sittingbourne Northern Relief Road which will be partly funded by developer contribution, an assessment will need to be made of any further improvements that may be deemed necessary taking account of the proposed development together with other committed development proposals in the vicinity. In particular concerns have been raised over the adequacy of the A249-B2005 junction and junction 5 of the M2, especially during the peak hour periods. The Traffic Impact Assessment will therefore need to have particular regard to peak hour traffic on the existing highway network and a comparison made with the predicted flows to and from the site over a 24 hour period.”

- 6.3.7 Reference to the points made in the Screening Opinion is made below.

Noise and Vibration

- 6.3.8 The environmental implications of noise and vibration arising from changes in traffic flow have been separately assessed at Chapter 12.

Visual Effects

- 6.3.9 The visual effect of traffic is complex and subjective and includes both visual obstruction and visual intrusion. The IEMA Guidelines acknowledge that in the majority of situations the changes in traffic resulting from a development will have little effect. Since the visual effects of traffic associated with the development will be negligible this impact is not considered further.

Severance

6.3.10 Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. The term is used to describe a complex series of factors that separate people from places and other people. 'Severance can also result from difficulty in crossing a heavily trafficked road ...' [1].

6.3.11 The guidance indicates that severance effects are considered 'slight' in cases that include:

- pedestrian at-grade crossings of new roads carrying below 8,000 vehicles per day (AADT) [2]; or
- changes of traffic flow of less than 30% [1].

Driver Delay

6.3.12 Where highways affected by new development are at or near capacity, the traffic associated with new development can cause or add to vehicle delays. Other sources of delay for non-development traffic can include:

- at the site entrance where there will be additional turning movements;
- on the highways passing the site where there is likely to be additional traffic and the flow might be affected by additional parked cars;
- at other key intersections along the highway which might be affected by increased traffic; and
- at junctions where the ability to find gaps in the traffic may be reduced, thereby lengthening delays.

Pedestrian Delay

6.3.13 Highly trafficked roads and changes to the volume or speed of traffic may affect the ability of people to cross roads. Research has shown a two-way vehicle flow of 1400 vehicles per day (AADT) equates to a 10 second delay in pedestrians crossing a road with no crossing facilities [1].

Pedestrian Amenity

6.3.14 This term is defined as the relative 'pleasantness' of journeys and can be affected by traffic flow, composition, noise and air pollution and includes pedestrian fear and intimidation. The guidance suggests a threshold for significance where traffic flow, or its lorry component, is halved or doubled [1].

6.3.15 Pedestrian amenity also covers what is referred to as fear and intimidation within the IEA guidelines. There are no commonly agreed thresholds for estimating levels of fear and intimidation but this impact is considered dependent on the volume of traffic, its HGV

component, its proximity to people, or the lack of protection or segregation from traffic influenced by factors such as footway width.

Accidents and Safety

- 6.3.16 It is possible to estimate the effects of increased traffic on accidents and safety from existing accident records, national statistics, the type and quantity of traffic generated, journey lengths and the characteristics of the routes in question.

Hazardous Loads

- 6.3.17 Some developments may involve transporting hazardous loads by road such as special wastes, toxic materials and chemicals. Where appropriate, the risks associated with accidents on such movements are identified or quantified.

Dust and Dirt

- 6.3.18 Certain types of development, notably quarrying and the transport of quarried materials, can give rise to deposition of dust and dirt on surrounding roads. The overall impact of this phenomenon normally depends to a large extent on the management practices adopted at the site in question, such as vehicle sheeting and wheel washing. Problems with dust and dirt are unlikely to occur at distances greater than 50m from the road [1].

Methodology

Site Preparation/Construction

- 6.3.19 It is expected that the level of traffic, particularly heavy vehicles, during the site preparation and construction phases of development will be less than the level of traffic during the operational phase of development. Assessment is therefore limited to the operational phases as a worst case.

On completion

- 6.3.20 Information relating to the transport movements associated with the operation of the proposed development has been derived from the proposed staff numbers, the proposed staff shift patterns and the need to transport raw materials and by-products to and from the site.

Assessment of Significance

- 6.3.21 Where the screening test outlined in paragraph 6.3.1 to 6.3.6 identifies that transport effects are potentially significant, a standard approach to expressing the duration, magnitude, direction and location of each effect is applied. The scale of each of these is presented below in Table 6.1, adapted from DMRB HA 205/08.

Table 6.1 Magnitude of Significance	
Negligible	<p>Very minor loss or detrimental alteration to one or more characteristics, features or elements (Adverse).</p> <p>Very minor benefit to or positive addition of one or more characteristics, features or elements (Beneficial).</p>
Minor	<p>Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements (Adverse).</p> <p>Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring (Beneficial).</p>
Moderate	<p>Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements (Adverse).</p> <p>Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality (Beneficial).</p>
Major	<p>Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements (Adverse).</p> <p>Large scale or major improvement of resource quality; extensive restoration or enhancement; major improvement of attribute quality (Beneficial).</p>

Cumulative Impacts

6.3.22 A review of proposed or possible future third party projects that may have a cumulative impact with the development proposals has been undertaken and used to inform this Environmental Statement.

6.3.23 In relation to transport, the traffic impact assessment of the proposed development has been undertaken in combination with the Sittingbourne Northern Relief Road. Kent County Council Highway Authority (KCCHA) have confirmed that the traffic flows provided by the Sittingbourne SATURN model incorporate all relevant committed development. This model has been tested at the Milton Creek crossing Public Inquiry and it is understood that the Inspector at this Inquiry concluded that the SATURN model was reliable and fit for purpose.

Limitations of the Assessment

6.3.24 The methodology for assessing the environmental impact of the transport associated with the construction and operation of the proposed development is based on the most recent and

robust information available. It is therefore considered that the assessment methodology contains no significant limitations.

6.4 Baseline Conditions

Site Location

- 6.4.1 The proposed site is located to the north of Sittingbourne on the Sittingbourne Relief Road (Swale Way), Kemsley. The site is bounded by Kemsley Paper Mill to the west, Ridham Avenue to the south, Barge Way to the north and The Swale to the east, as shown in Figure 1 and 2 of the Transport Assessment included in Appendix 6.1.

The Site

- 6.4.2 The site lies adjacent to the line of a dismantled railway that formerly connected with the branch line between Sittingbourne and the Isle of Sheppey. Evidence of this rail line is visible in the vicinity of the site. An existing narrow gauge rail line runs from a point to the south-east of the existing paper mill to the south-west into Sittingbourne. This was formerly used to transport materials between the existing Kemsley paper mill and another paper mill in Sittingbourne. The line is now used for informal and recreational purposes under the operation of the management of the Sittingbourne and Kemsley Light Railway.
- 6.4.3 The A249 is located approximately 2km to the north and west of the site and is accessed via Swale Way. The A249 connects with both the A2 west of Sittingbourne and the M2 at Junction 5 approximately 8km south of the site. To the north, the A249 provides access to the Isle of Sheppey.
- 6.4.4 Two points of vehicular access are currently available to the existing Kemsley Paper Mill. The southern access is via Ridham Avenue to the south of the mill site and is used by HGVs (including those requiring use of the weighbridge) and staff and visitor cars. The main site car park is provided to the south of the site. The other site access that is less intensively used is located at the north-east corner of the site and is accessed via Barge Way. It is proposed that staff and visitors at the proposed site will use the existing southern access and car park. HGVs accessing the proposed development will use the existing northern access.

Highway Network

- 6.4.5 The site is located approximately 3 km north-east of Sittingbourne Town Centre and approximately 2km to the south-east of the A249. The local transport network surrounding the site is shown in Figure 2 of the Transport Assessment included in Appendix 6.1.

- 6.4.6 The Kemsley Paper Mill site is accessed via a secure entry gate at the southern entrance via Ridham Avenue. The on-site access road is approximately 7.5 metres in width, reducing to 3.8 metres in width at three locations where width restrictions are present. A pedestrian footpath is present on the southern side of the access road and routes from the visitor car park to the EON CHP Plant to the north east of the site. The minimum width of this footway is around 1.2m. The maximum speed limit on site is 10mph, reducing to 5 mph in certain areas.
- 6.4.7 Ridham Avenue connects with the first section of the Sittingbourne Relief Road (Swale Way) at a roundabout west of the Paper Mill. Prior to the implementation of the Relief Road vehicular access to the existing Paper Mill was via Ridham Avenue. Vehicular traffic can no longer access the western section of Ridham Avenue from the Relief Road, however, a 4m wide, lit, shared use pedestrian and cycle route connects the Relief Road with Ridham Avenue to the west.
- 6.4.8 The Relief Road is a high quality, wide, single carriageway, approximately 7.5 metres in width, with one lane in each direction. The Relief Road is well lit and has a wide, approximately 3.4 metre in width, shared use pedestrian/cycle path on its western side. A speed limit of 40mph exists along the Relief Road.
- 6.4.9 North of the Paper Mill a roundabout connects the Relief Road to Barge Way that routes around the northern side of the Paper Mill and continues to the north to connect with the A249 west of the Isle of Sheppey via a private road. Barge Way is a high quality, wide, single carriageway, approximately 7.5 metres in width, with one lane in each direction. Barge Way is well lit and has a wide, approximately 3.4 metres in width, shared use pedestrian/cycle path on its northern side. Barge Way narrows to approximately 7.4 metres in width at the junction with the private access road to the north of the site, and the shared use footway reduces to approximately 3.0 metres in width. A speed limit of 40 mph exists along Barge Way. The Paper Mill site can be accessed from the north via a secure gated entry point, approximately 6 metres in width, on the northern section of Barge Way.
- 6.4.10 To the north of the site, Barge Way connects with the private road, providing access to businesses, including storage and distribution and bulk aggregates, along this route before connecting to an unclassified road at the junction with Ridham Docks. The unclassified road is a single track carriageway which provides access to the A249. The unclassified road varies in width and is approximately 4.8m wide at its narrowest point. The road is unlit and is subject to a speed limit of 20mph. Passing places are present along this route in order to allow HGVs to pass. A height restriction of 14 feet 6 inches exists under the bridge at the northern end of this road. The bridge carries the former A249 and the rail line connecting to the Isle of Sheppey. A new section of the A249 has been constructed over recent years over a new bridge over the Swale.

Northern Relief Road

- 6.4.11 The first section of the Sittingbourne Northern Relief Road, from the southern roundabout of the A249 'Dumbbell' junction north of Kemsley as far south as the Paper Mill, was opened in January 2005. This section of the Distributor Road is known as Swale Way and provides a direct, high quality link between Ridham Avenue (the Paper Mill) and the A249 Trunk Road.
- 6.4.12 The purpose of the Northern Distributor Road is to relieve the A2 that runs east to west through Sittingbourne and currently operates at capacity during some periods of the day. It is planned that Swale Way will be continued to the south-east over Milton Creek to connect, in the first instance, over Milton Creek to the industrial areas to the north-east of Sittingbourne and later to connect with the A2 at Bapchild, east of Sittingbourne. The first part of the scheme (the link over the Creek) has Local Transport Plan provisional funding of £29m and Sustainable Communities provisional funding of £10.4m from Government and a developer contribution. It is due to be completed in 2011.

Access on Foot

- 6.4.13 When the first section of the Sittingbourne Relief Road (also known as the Milton and Kemsley Distributor Road) was constructed, Ridham Avenue was closed to vehicular traffic at a point immediately west of the new roundabout linking Ridham Avenue with the Relief Road. The route remains open for pedestrians and links to the eastern residential area of Kemsley. An on-site pedestrian footpath currently routes around the south of the Kemsley Paper Mill from the Kemsley Paper Mill visitor car park and gatehouse to the EON CHP Plant.
- 6.4.14 Shared pedestrian/cycle paths run along the western side of Swale Way and the northern side of Barge Way.
- 6.4.15 The Saxon Shore Way, a long distance footpath follows the shore of the Swale to the east of the site. This continues north towards Chertney Marshes and further to Gillingham. To the south it links into Sittingbourne and continues east towards Faversham. The route is not lit and is not generally surfaced.
- 6.4.16 At present the traffic flows along Ridham Avenue and Barge Way are low and vehicle speeds appear from observation to be generally low.
- 6.4.17 Paragraph 75 of PPG13: Transport suggests that walking is a suitable alternative to replace car trips for journeys of under 2km. The IHT publication 'Providing for Journeys on Foot' (IHT 2000) suggests acceptable walking distances for various land uses, as set out in Table 6.2.

Definition	Town Centres (m)	Commuting/ Schools (m)	Elsewhere (m)
Desirable	200	500	400
Acceptable	400	1,000	800
Preferred Maximum	800	2,000	1,200

Source: Providing for Journeys on Foot, IHT, 2000

6.4.18 The site lies within 1km of some residential areas to the north of Kemsley. The site also lies within the maximum walking distance of a bus stop.

Cycle Routes

6.4.19 The site is within close proximity to on and off road cycle routes which link to the wider Kemsley and Sittingbourne area. A National Cycle Network traffic free route is provided alongside the Kemsley Marsh Drain to the south west of the site which leads to a National Cycle Network on road route provided along the B2005 Grovehurst Road from Sittingbourne to Queenborough. This on road cycle route provides a direct link to Kemsley Railway Station. An additional National Cycle Network traffic free cycle route is proposed to be implemented from Milton Creek to Kemsley Marsh linking with Kemsley Marsh Drain and the B2005. Further details of existing cycle routes within the vicinity of the site can be found in Figure 3 of the transport assessment included as Appendix 6.1.

6.4.20 The quiet nature and low traffic speeds of the roads to the south west of the site linking to Kemsley, are conducive to cycling. Cycling is not currently permitted on the existing Mill site for health and safety reasons.

6.4.21 Paragraph 78 of PPG13: Transport suggests cycling has the potential to substitute for shorter car journeys of under 5km. This journey distance would make Kemsley and the majority of Sittingbourne accessible by bicycle.

Buses

6.4.22 Bus stops are located approximately 900m west of the site on Ridham Avenue which are served by bus service number 347 which provides a direct link to Sittingbourne town centre. The journey time from Kemsley to Sittingbourne is approximately 20 minutes and the service operates 4 buses per hour throughout the day. Additional bus stops are located on Grovehurst Road approximately 1.5km west of the site. These bus stops are served by

service numbers, 322, 323, 324, 336, 338, 339, and 347. These bus services are summarised in Table 6.3.

Table 6.3: Summary of Bus Services

No.	Operator	Route	Service Frequencies (per hour)			
			Monday - Friday			
			AM Peak	Off Peak	PM Peak	Evening
347	Arriva Medway Towns	Kemsley-Sittingbourne	4	4	4	4
322	Chalkwell Garage and Coach Hire	Sittingbourne-Elmley	2	1 service only	-	-
323	Chalkwell Garage and Coach Hire	Sittingbourne-Sheerness	2 services per day			
324	Chalkwell Garage and Coach Hire	Canterbury-Sheerness	1 service per day Wednesday and Friday only			
336	Arriva Kent and Sussex	Maidstone-Leysdown on Sea	1 service per day Tuesday and Friday only			
338	Arriva Kent and Sussex	Leysdown on Sea-Chatham	1 service per day Monday only			
339	Arriva Kent and Sussex	Leysdown on Sea-Hempstead Valley	1 service per day Thursday only			

Rail

6.4.23 Kemsley Railway Station is located approximately 1.8km west of the site on Grovehurst Road. A summary of the rail services from Kemsley Rail Station can be found in Table 6.4.

Table 6.4: Summary of Rail Services

Operator	Route	Service Frequencies (per hour)			
		AM Peak	Off Peak	PM Peak	Evening
Southeastern	London Victoria-Chatham-Gillingham-Sittingbourne-Sheerness-Faversham-Canterbury East- Dover-Margate-Ramsgate	3	2	3	3

6.4.24 Southeastern Trains operate all services from Kemsley Rail Station. Kemsley station has regular services to London Victoria with a service frequency of three trains per hour during the morning peak with a journey time of approximately one hour and ten minutes. Stations served on the routes include Sittingbourne, Sheerness, Faversham and Canterbury.

Road Safety

6.4.25 In accordance with 'Guidance on Transport Assessment', published by the Department for Transport in March 2007, Personal injury accident (PIA) statistics have been obtained for the surrounding highway network for the latest available 36 months (three years) between the 1st of April 2006 and the 31st of March 2009. The study area includes Ridham Avenue, Sittingbourne Relief Road, Barge Way, the A249 junction with the B2005 at Iwade, the A2 junction with the A249 and the M2 junction 5.

6.4.26 Details of the study are provided in the Transport Assessment attached as Appendix 6.1 along with a summary of the PIAs in terms of their location and severity. As can be seen there were a total of 45 PIAs during the three year period of which five were serious injury accidents and 40 were slight injury accidents. There were no fatal injury accidents in the study area during the study period.

6.4.27 During the three year period there were no injury accidents on the local transport network within the immediate vicinity of the site including Ridham Avenue, the Northern Relief Road and Barge Way.

6.4.28 Of the five serious injury accidents within the three year study period one involved a pedestrian at the A249 junction with the B2005 Grovehurst Road and two involved a motorcycle. There were no serious injury accidents during the three year study period that involved a HGV.

6.4.29 During the three year period there were 40 PIAs at the junction between the M2 junction 5 and the A249, of which four resulted in serious injury and 36 resulted in slight injury. Of the four serious injury accidents two involved the driver/rider losing control of the vehicle and one involved a result of a driver failing to brake in time to avoid a rear end collision. One serious injury accident involved a rider braking sharply to avoid the vehicle in front. Of the 36 slight injury accidents, 13 involved a driver or rider losing control of the vehicle and nine involved a

driver or rider failing to brake in time resulting in a rear end collision. Vehicles attempting to change lane was the principal contributory factor to seven of the 36 slight injury accidents.

6.4.30 Five injury accidents occurred at the southern roundabout of the A249 dumb-bell junction with the B2005 Grovehurst Road of which one resulted in serious injury as a result of a pedestrian running into the path of oncoming vehicle without looking and four resulted in slight injury. None of the four slight injury accidents involved a pedestrian, cyclist or HGV. There were no PIAs on the northern roundabout of the junction at Iwade during the three year period.

6.4.31 It is concluded that the record of personal injury road traffic accidents does not suggest that there are any deficiencies in the local highway network that could be exacerbated by the proposed development.

Existing Traffic Flows

6.4.32 The existing 24 hour daily light and heavy vehicle traffic flows on the local highway network surrounding the site, including the M2, A249 and the A2 have been derived from the Sittingbourne SATURN model which assumes the presence of the Northern Relief Road. The SATURN model has been created on behalf of Kent County Council (KCC) and is owned by KCC. At present, the model has been run for the years 2011, 2016, 2021 and 2026.

6.4.33 The output from the SATURN model is only available as daily flows. Additional sources of traffic data have been used to derive peak hour flows. The assessment area includes the following links:

- Swale Way (existing section of Northern Relief Road)
- Barge Way
- B2005 south-east of the Swale Way junction
- A249 east and west of Swale Way junction
- A2 east and west of the A249
- M2 north and south of Junction 5.
- A249 west of the M2

6.4.34 The 24 hour daily modelled traffic flows on the A249 and local highway network surrounding the site, have been factored to peak hour flows using the observed traffic flow data for Swale Way obtained from Kent County Council. Peak hour traffic flows around junction 5 of the M2 have been derived from existing observed hourly flows on the M2.

6.4.35 The existing daily light and heavy vehicle traffic flows at the M2 junction 5 have been derived from the most recently observed traffic flows obtained from the Highways Agency. This traffic flow data does not take account of the presence of the Northern Relief Road. A summary of the average AM and PM peak hour traffic flows (0800-0900 and 1700-1800) and 24 hour daily traffic flows for the 2011 base year are shown in Table 6.5 below.

Link	AM Peak			PM Peak			24 Hour		
	Cars	HGVs	Total	Cars	HGVs	Total	Cars	HGVs	Total
Swale Way	1,055	201	1,256	1,234	235	1,469	13,363	2,545	15,908
Barge Way	239	128	368	292	67	358	2,802	1,398	4,199
A249 East of Swale Way	2,892	286	3,178	3,382	334	3,716	36,622	3,622	40,244
A249 West of Swale Way	2,671	399	3,070	3,123	467	3,590	33,822	5,054	38,876
M2 Junction 5 East	3,942	532	4,475	4,140	559	4,700	51,400	6,943	58,343
M2 Junction 5 West	4,417	719	5,136	4,598	749	5,347	56,324	9,170	65,494

6.4.36 The average 24 hour two-way daily flow is highest at the M2 junction 5 West at 65,494 vehicles and lowest along Barge Way at 4,199 vehicles. The average peak hour daily traffic flow is highest during the AM and PM peak at the M2 junction 5 West at 5,136 and 5,347 vehicles respectively. The average peak hour daily traffic flow is lowest during the AM and PM peak on Barge Way at 368 and 358 vehicles. The M2 junction 5 West has the highest usage by HGVs.

6.5 Identification and Evaluation of Key Impacts

Site Preparation and Construction

6.5.1 The earliest start date for site preparation is 2011 and construction is expected to last 3 years. During this period it is expected that the number of vehicle movements associated with the site, including HGVs will be lower than during the operation of the site. The assessment of the impact during site operation therefore represents a worst case.

Site Operation

6.5.2 It is explained in the Transport Assessment that it is possible that waste could be transported by water and/or rail thus reducing the number of heavy vehicle movements on the local

highway network. However, for the purposes of assessing possible environmental impacts on a 'worst case' basis it has been assumed that all waste is transported by road. The number of HGV movements associated with the proposed development has been derived on the basis of the following assumptions:

Import of Waste

- Annual delivery of waste: 550,000 tonnes;
- Average HGV load of 20 tonnes;
- Giving, 27,500 HGVs per annum or 55,000 HGV movements per annum;
- Waste deliveries Monday-Friday and Saturday morning (5.5 days per week or 287 days per year); and
- Average of 192 HGV movements per day (96 movements Saturday)

Export of Ash/Aggregate

- Maximum annual export of ash/ aggregate: 165,000 tonnes;
- Average HGV load of 20 tonnes;
- Giving 8,250 HGVs per annum or 16,500 HGV movements per annum;
- Ash removals Monday-Friday and Saturday morning (5.5 days per week or 287 days per year); and
- Average of 58 HGV movements per day (29 movements Saturday)

Reagent Transport

- Assume 4 HGVs per day or 8 HGV movements per day.

6.5.3 On the basis of the above, the average number of HGV movements assuming the maximum amount of fuel deliveries per year, will be 258 HGV movements per day.

6.5.4 The earliest that the development could be completed and operational is expected to be 2014. The following table summarises the base traffic flows in 2014. These flows take into account the completion of the creek crossing section of the Sittingbourne Northern Relief Road. Details are provided in the Transport Assessment attached as Appendix 6.1:

Link	AM Peak			PM Peak			24 Hour		
	Cars	HGVs	Total	Cars	HGVs	Total	Cars	HGVs	Total
Swale Way	1,175	224	1,398	1,374	262	1,635	14,875	2,833	17,709
Barge Way	248	132	380	301	69	370	2,897	1,445	4,342
A249 East of Swale Way	2,956	292	3,248	3,457	342	3,799	37,435	3,702	41,137
A249 West of	2,782	416	3,198	3,253	486	3,740	35,233	5,265	40,498

Swale Way									
M2 Junction 5 East	4,048	635	4,683	4,734	743	5,477	51,268	8,043	59,311
M2 Junction 5 West	4,911	812	5,723	5,743	949	6,693	62,195	10,28	72,476

6.5.5 Traffic flows on the surrounding network (Table 6.6) are highest on M2 junction 5 West with flows of 72,476 vehicles over a 24 hour period and 6,693 during the PM Peak. The M2 junction 5 West also has the highest number of HGV use at 10,281 HGVs over a 24 hour period. Barge Way has the lowest number of vehicles at 4,342 during a 24 hour period.

6.5.6 Table 6.7 summarises the traffic generated by the operational phase of development:

Table 6.7 Operational Traffic Generation 2014

Link	AM Peak			PM Peak			24 Hour		
	Cars	HGVs	Total	Cars	HGVs	Total	Cars	HGVs	Total
Swale Way	6	22	28	6	22	28	41	258	299
Barge Way	6	22	28	6	22	28	46	258	304
A249 East of Swale Way	0	0	0	0	0	0	0	0	0
A249 West of Swale Way	2	22	24	2	22	24	15	258	273
M2 Junction 5 East	0	2	2	0	2	2	1	26	27
M2 Junction 5 West	0	13	13	0	13	13	2	155	157

6.5.7 Over a 24 hour period Barge Way has the greatest number of total vehicles generated during the operational phase at 304 vehicles of which 258 are HGVs. The A249 East of Swale Way is not expected to receive any operational vehicles. During the peak periods Barge Way and Swale Way again receive the most traffic generated during site operation at 28 vehicles, 22 of which is are HGVs.

6.5.8 Table 6.8 summarises the % impact of operational traffic in 2014:

Table 6.8 % Impact of Operational Traffic 2014

Link	AM Peak			PM Peak			24 Hour		
	Cars	HGVs	Total	Cars	HGVs	Total	Cars	HGVs	Total
Swale Way	0.5%	9.6%	1.9%	0.4%	8.2%	1.7%	0.3%	9.1%	1.7%
Barge Way	0.0%	16.2%	5.7%	0.0%	31.1%	5.8%	0.0%	17.9%	5.9%
A249 East of	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Swale Way									
A249 West of Swale Way	0.1%	5.2%	0.7%	0.1%	4.4%	0.6%	0.0%	4.9%	0.7%
M2 Junction 5 East	0.0%	0.3%	0.0%	0.0%	0.3%	0.0%	0.0%	0.3%	0.0%
M2 Junction 5 West	0.0%	1.6%	0.2%	0.0%	1.4%	0.2%	0.0%	1.5%	0.2%

6.5.9 The greatest impact in terms of total traffic flows caused by site operation during a 24hr period will be 5.9% on Barge Way. The highest HGV impact will also be on Barge Way at 17.9%. During the peak hours total flows on Barge Way are predicted to increase by between 5.7% and 5.8%. HGV flows on Barge Way are predicted to increase by between 16.2% and 31.1%. On Swale Way it is predicted that over a 24 hour period the total number of vehicles will increase by 1.7% and the number of HGVs by 9.1%. During peak periods the predicted levels of impact on Swale Way are similar to the daily levels. On the A249 the proposed development will lead to an increase in daily and peak flows of less than 1%. In terms of HGVs the level of impact on the A249 is predicted to be around 5%. The predicted level of impact on the M2 is between 0.0% and 1.6% in all cases.

6.5.10 The significance of these levels of impact is considered below in terms of the various categories of transport environmental impact.

Cumulative Impacts

6.5.11 The cumulative impacts of committed developments within the vicinity of the site have been incorporated within the above assessments. Kent County Council Highway Authority (KCCHA) have confirmed that the traffic flows provided by the SATURN model incorporate all relevant committed development. This model has been tested at the Milton Creek crossing Public Inquiry and it is understood that the Inspector at this Inquiry concluded that the SATURN model was reliable and fit for purpose.

Quantification of Impact

6.5.12 All daily traffic flow increases are predicted to be well below the 10% threshold identified by the IEMA which would require further more detailed assessments. However, there are increases of HGVs in excess of 10% during the AM and PM peak period on Barge Way (16.1% and 31.1% respectively). Although the 10% threshold is exceeded on Barge Way, it is not a sensitive area in terms of the criteria for assessing transport environmental impact. The relatively high % impacts also reflect the low background flows on this link. In absolute terms the increases in HGV movements during the peak hours represents one additional HGV

movement every three minutes. The following sections deal with individual environmental effects.

- 6.5.13 **Noise and Vibration:** The noise and vibration effects of road traffic are assessed in detail in Chapter 12.
- 6.5.14 **Visual Effects:** Development related traffic would route via existing roads, which already carry existing traffic. The developments will not significantly alter the visual impact of traffic on the road network, with all routes affected currently accommodating all vehicle types.
- 6.5.15 It is thus considered that the development generated traffic would be of local, permanent negligible significance in terms of visual amenity.
- 6.5.16 **Severance:** According to the IEMA guidelines a 30% change in traffic flow is likely to produce a 'slight' change in severance, with 'moderate' and 'substantial' changes occurring at 60% and 90% respectively. Severance is only likely to occur on highly trafficked roads and result from the perceived division the road and traffic creates between either side.
- 6.5.17 The maximum increase in traffic flows occurs on Barge Way where the level of increase is slightly under 6%. On all other links the level of increase resulting from the proposed development is less than 2%. It is concluded that the development has no significant environmental impacts in terms of severance.
- 6.5.18 It should be noted that the area where severance is most likely to occur as a result of the development is across Swale Way between the site and Ridham Avenue west (between residential areas and the employment at the Kemsley Mill and the proposed site). Since all HGV traffic accesses the site via the northern mill access the level of increase in the vicinity of Ridham Avenue will comprise staff car trips only and will therefore be negligible.
- 6.5.19 It is thus considered that the development generated traffic would be of local, permanent negligible significance in terms of severance.
- 6.5.20 **Driver Delay:** The predicted levels of increase in flows on the highway network are shown to be less than 1% in all cases with exception of Swale Way and Barge Way. This level of impact is well within typical daily variations in flows. It is therefore concluded that the proposed development will have a negligible impact on driver delay on the local highway network, including at the Swale Way/A249 junction and at the A249/M5 junctions. Details are set out in the Transport Assessment in Appendix 6.1.
- 6.5.21 It is thus considered that the development generated traffic would be of local, permanent negligible significance in terms of driver delay.

- 6.5.22 **Pedestrian Delay and Amenity:** There are no significant pedestrian crossings affected by the traffic associated with the proposed development. It is thus considered that the development generated traffic would be of local, permanent negligible significance in terms of pedestrian delay.
- 6.5.23 It requires a halving or doubling of the HGV component of passing traffic for pedestrian amenity to be affected. The above assessments indicate that there are no points in the network where these levels of change are experienced as a result of the proposed development. It should also be noted that the pedestrian facilities along Swale Way and Barge Way are of a high quality in terms of width and in terms of separation from the carriageway. The level of fear and intimidation associated with the development traffic will therefore be reduced compared with a situation where pedestrians are required to walk closer to passing vehicles. It is thus considered that the development generated traffic would be of local, permanent negligible significance in terms of pedestrian amenity.
- 6.5.24 **Accidents and Safety:** The evidence outlined above suggests that there are no issues with regards to road safety on the local highway network that may be exacerbated as a result of the proposed development. The new section of the Northern Relief Road and Barge Way, which provide access to the site, are constructed to current design standards and the accident record reflects that these roads that are well designed, safe and lit. It is considered that the traffic generated by the proposed development would not have a material impact on road safety on the local highway network.
- 6.5.25 It is thus considered that the development generated traffic would be of local, permanent negligible significance in terms of accidents and safety.
- 6.5.26 **Hazardous Loads:** The Guidelines for the Environmental Assessment of Road Traffic acknowledge, in paragraph 2.4, that most developments would not result in an increase in the number of movements of hazardous or dangerous loads. The proposed development will treat non hazardous waste. If any hazardous wastes are brought to site then these will be stored separately and be removed in accordance with procedures agreed with the Environment Agency. Any hazardous waste which does arrive at the site will therefore be stored, treated, managed and transported in a safe manner and in accordance with current regulations.
- 6.5.27 It is thus considered that the development generated traffic would be of local, permanent negligible significance in terms of hazardous loads.
- 6.5.28 **Air Quality:** The effects of road traffic on air quality has been assessed in detail in Chapter 7.

- 6.5.29 **Dust and Dirt:** Dust and dirt arising from traffic is mainly associated with HGV traffic undertaking particular activities. The extent of any impact of dust and dirt arising from the proposed operations would be dependent upon the management practices adopted on site. Specifically procedures such as washing down of wheels and sheeting of HGVs likely to shed debris prevents the occurrence of dust and dirt spreading from the site to the adjoining road network.
- 6.5.30 All vehicular routes within the site will be surfaced and it is therefore unlikely that any dust or dirt would arise from traffic generated by the site. The mitigation measures such as wheel washing and vehicle sheeting outlined above will ensure that any dust and dirt that may be generated is controlled. Wheel washing will be particularly important during the construction phase of development when vehicles will be crossing unsurfaced ground. Sheeting will be relevant to both construction and operational phases.
- 6.5.31 It is thus considered that the development generated traffic would be of local, permanent negligible significance in terms of dust and dirt.

6.6 Design Response and Mitigation

- 6.6.1 As set out above, the effect of road traffic as a result of the construction and operation of the proposed WTF development is not predicted to have any significant environmental effect. This is based on the assessment guidelines set out by the IEMA in their 'Guidance Note No. 1: Guidelines for the Assessment of Road Traffic'. The increase in total traffic as a result of development is less than the threshold which would require any more detailed assessments.
- 6.6.2 The Highway Authority has confirmed that there is no need for a Travel Plan for employees at the proposed development given the low level of staffing involved. However, the Highway Authority has expressed a desire for the development to cater for movements on foot and suitable pedestrian routes to and from the site linking to the adjacent site, bus stops and surrounding residential areas have been incorporated into the design.
- 6.6.3 It is considered that the traffic generated by the proposed development will not be significant and that there is therefore no need for any specific mitigation measures. Notwithstanding this, this does not obviate the need for the on site management of HGV traffic. Feedback from the public exhibitions highlighted the concerns of local residents. The operator will manage vehicle heavy movements to allay those concerns.

6.7 Residual Impact

- 6.7.1 The above assessments have demonstrated that the traffic generated by proposed development is not considered to be significant. Indeed, in accordance with the IEMA

guidelines, the proposed development is likely to have no significant effect on the adjacent road network and highway users. It is concluded that the proposed development will cause no residual transport environmental impacts.

6.7.2 Table 6.9 contains a summary of the transport environmental impacts of the proposed development.

Table 6.9 Summary of Residual Impacts

Phase	Nature of Effect	Significance	Magnitude of Impact	Duration	Nature	Mitigation/Enhancement	Residual Impact	Geographical Level of Importance of Issue					
								I	N	R	D	L	
Preparation / Construction	Severance	Negligible	Minor	Temporary	Adverse	none	Negligible						✓
	Driver Delay	Negligible	Minor	Temporary	Adverse	none	Negligible						✓
	Pedestrian Delay	Negligible	Minor	Temporary	Adverse	none	Negligible						✓
	Pedestrian Amenity	Negligible	Minor	Temporary	Adverse	none	Negligible						✓
	Accidents and Safety	Negligible	Minor	Temporary	Adverse	none	Negligible						✓
	Hazardous Loads	Negligible	Minor	Temporary	Adverse	none	Negligible						✓
	Dust and Dirt	Negligible	Minor	Temporary	Adverse	none	Negligible						✓
Operation	Severance	Negligible	Minor	Permanent	Adverse	none	Negligible						✓
	Driver Delay	Negligible	Minor	Permanent	Adverse	none	Negligible						✓
	Pedestrian Delay	Negligible	Minor	Permanent	Adverse	none	Negligible						✓
	Pedestrian Amenity	Negligible	Minor	Permanent	Adverse	none	Negligible						✓
	Accidents and Safety	Negligible	Minor	Permanent	Adverse	none	Negligible						✓
	Hazardous Loads	Negligible	Minor	Permanent	Adverse	none	Negligible						✓
	Dust and Dirt	Negligible	Minor	Permanent	Adverse	none	Negligible						✓

Key: I: International N: National R: Regional D: District L: Local

- 6.7.3 It is concluded from the above table that the residual transport environmental impacts associated with the site preparation, construction and operation are, at worst minor, negligible and permanent.
- 6.7.4 Measures will be put in place for the control of dirt and dust around the site access during the site preparation and construction phases.
- 6.7.5 The cumulative impacts of committed developments within the vicinity of the site have been incorporated within the above assessments

6.8 Conclusions

- 6.8.1 The transport impacts of the proposed development have been assessed in accordance with the guidance set out in the IEMA publication Guidelines for the Environmental Assessment of Road Traffic, Guidance Note No. 1 for site preparation, construction and operation.
- 6.8.2 The assessments undertaken have demonstrated that the proposals would increase daily traffic flows on Barge Way by 5.9%, on Swale Way by 1.7% and on all other links by less than 1%. HGV traffic on Swale Way is predicted to increase by less than 10% on a daily and peak hour basis, by around 5% on the A249 and by less than 2% on the M2. The highest level of impact in terms of HGV traffic is on Barge Way that carries all HGV development traffic. The increase (22 HGVs per hour) represents one additional HGV movement every three minutes.
- 6.8.3 The assessment of transport environmental impacts assumes that all waste is transported by road. This ensures that a worst case situation is considered. It is possible that waste could be transported by rail or water via Ridham docks thus reducing the number of HGVs on the local highway network.
- 6.8.4 The above assessments indicate that the overall transport environmental impact of the proposed development will be, at worst, permanent minor adverse with negligible significance.

6.9 References

- [1] Guidance Notes No. 1. Guidelines for the Environmental Assessment of Road Traffic. The Institute of Environmental Assessment, March 1993.
- [2] The Design Manual for Roads and Bridges. Volume 11 – Environmental Assessment. Department of Transport et.al. June 1993 (and updates).