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May 2018

**New Oriented Strand Board Facility at Kronospan
Chirk, Wrexham**

Transport Assessment

Prepared on behalf of:



Kronospan Ltd.



Axis
Camellia House
76 Water Lane
Wilmslow
SK9 5BB

Tel: 0844 8700 007
www.axisped.co.uk

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1.0 INTRODUCTION

1.1 Overview

1.1.1 This Transport Assessment (TA) has been prepared by Axis on behalf of Kronospan Ltd., hereafter referred to as Kronospan, to consider highways and transport issues related to proposals for the development of an oriented strand board (OSB) production facility.

1.1.2 The Proposed Development would be undertaken at the Kronospan manufacturing facility on the industrial site that forms part of Maesgwyn Farm off Holyhead Road, Chirk, Wrexham. At present OSB is manufactured at European Kronospan sites and imported to the UK to meet customer needs. The Proposed Development would allow Kronospan to manufacture this product in the UK at the Chirk manufacturing facility, enhancing the sites capability and improving the long term sustainability of the business at the Chirk manufacturing site. The Proposed Development is part of an ongoing improvement programme at the site aimed at ensuring the long term environmental improvements and economic viability of the manufacturing facility.

1.1.3 The purpose of this report is to appraise the Local Planning and Highway Authority, Wrexham County Borough Council (WCBC) of the anticipated highways and transport matters associated with the proposed OSB facility. The scope and nature of the assessment issues included in this Transport Assessment reflects the extent of highways and traffic issues identified as likely being of material interest to the key local highway stakeholders of WCBC (Local Highway Authority) and Welsh Government / North and Mid-Wales Trunk Road Agency (WG / NMWTRA - Strategic Highway Authority), following pre-application scoping discussions with both.

1.2 Report Structure

1.2.1 The structure of the remainder of this Transport Assessment is as follows:

- **Section 2** considers the existing conditions and includes; a description of the site location and existing conditions; a description of the local highway network immediately adjacent to the site; the location of the site relative to local amenities, facilities and alternative transport mode choices; and, a review of local personal injury accident trends;
- **Section 3** provides a review of the existing Kronospan site operations, including consideration of historical traffic generation at the site;
- **Section 4** of this report outlines the OSB facility proposals and includes; review of the existing site access arrangements; review of the proposed OSB facility scheme; consideration of the anticipated change in vehicular trip generation to/from the site, arising from the development proposals; and, the distribution of any additional new trips over the local highway network;
- **Section 5** provides an overview of the key assessment parameters including; consideration of assessment scenarios; consideration of background network traffic growth; and, traffic conditions forming the baseline for assessment;
- **Section 6** considers the impact of the potential traffic loadings of the proposed development scheme on key local highway links and junctions; and,
- **Section 7** provides a summary and conclusion to the report derived from the analysis presented in the preceding chapters.

2.0 SITE LOCATION & EXISTING CONDITIONS

2.1 Site Location

2.1.1 The location of the Kronospan facility is illustrated in **Figure TA1** to this report. These figures identify the location with respect to the strategic route corridors of both the A5 and A483 trunk roads, and other elements of the surrounding highway network, including the surrounding local settlements of Chirk, Wrexham and Oswestry.

2.1.2 The immediate context of the site location, including the surrounding local highway network, is illustrated in **Figure TA2** to this report.

2.1.3 Description of Site & Local Network

2.1.4 The Kronospan plant occupies a large site to the immediate north west of Chirk town centre, with access taken from the B5070 Holyhead Road. It is situated within an established industrial area that includes the Cadbury's (Mondelez) factory, a water treatment facility, and other light industrial uses. A number of residential areas flank Holyhead Road to the east, constituting the northern extent of the town.

2.1.5 The western perimeter of the Kronospan site is formed by the Shrewsbury to Chester railway. The Llangollen Canal is located to the west of the railway line, circa 30m from the boundary of the site at its closest point. The canal is designated as the Pontcysyllte Aqueduct and Canal World Heritage Site and as a Scheduled Monument. The eastern perimeter of the site is formed by the B5070 Holyhead Road. A sewerage pumping station and one Kronospan owned property are located to the immediate north of the site. To the immediate south of the site is the Cadbury's (Mondelez) factory, the Chirk AAA sports ground and the Chirk recreational ground.

2.1.6 The main Kronospan site access links to the B5070 Holyhead Road via a priority junction. The connection has been designed to accommodate the existing HGV movements associated with the Kronospan operation, and possesses radii of approximately 12 metres for the left turn out of the site.

Skid-resistant surface dressing has been applied to the B5070 Holyhead Road at the site entrance, and an on-carriageway cycle lane is provided.

Local Highway Network

- 2.1.7 The B5070 Holyhead Road is linked to the strategic highway network via a roundabout junction with the A5 to the north of the town. This in turn links to Mid-Wales to the west and the A5/A483 to the east. The A5/A483 provides onward connections to the rest of the UK via the strategic highway network.
- 2.1.8 Holyhead Road is a single carriageway route that links Chirk town centre to the wider highway network. It is subject to a 30mph speed limit at the site frontage, and rises to 50mph circa.850m north of the site, and National Speed Limit on the approach to the north of the site, and national speed limit on the approach to the A5 roundabout. Chirk town centre lies less than a kilometre to the south of the site. At the site frontage, Holyhead Road is approximately 9 metres wide.
- 2.1.9 HGVs travelling to and from the Kronospan site route via the B5070 Holyhead Road the north, and the A5 and A483 from there. A weight limit of 17.5 tonnes is in force to the south of the site between Chirk town centre and Gledrid Roundabout (with the A483), which serves to minimise heavy vehicle movements through the town centre and on less suitable sections of Holyhead Road. The existence of this southern weight limit restriction is signed to vehicles exiting the Kronospan site onto Holyhead Road, with all HGV movements signed to access the A5/A483 via Holyhead Road.
- 2.1.10 In the vicinity of the site, Holyhead Road has a footway alongside the southbound carriageway and is fully lit between the site and Chirk town centre. A cycle lane is demarcated in both directions within the carriageway, with red surface treatment provided at priority junctions. A bus stop is situated close to the site entrance, with a shelter and timetable information provided.

- 2.1.11 Chapel Lane lies opposite to the site, providing access to a number of residential areas within Chirk and has been designated as a 20 mph zone with speed cushions provided to assist enforcement. Chapel Lane forms part of a staggered crossroads with the Kronospan entrance, albeit with limited movement between the two minor arms.

Strategic Highway Network – A5 & A483

- 2.1.12 Both the A5 and A483 constitute part of the Strategic Road Network in North Wales as managed by the North and Mid-Wales Trunk Road Authority (NMWTRA) on behalf of the Welsh Government (WG).
- 2.1.13 The A5 links Llangollen in the west to the M54 (and ultimately the M6) in the West Midlands via Shrewsbury. The route converges with the A483 at Halton Roundabout, before then diverging on a southeast direction at Mile End Roundabout, Oswestry. The A483 constitutes a north – south strategic link between Chester and the western termination of the M4 at Llanelli. Halton Roundabout (A5 / A483) has undergone a number of recent upgrades by NMWTRA, and is subject to a programme of continual review and upgrade where required.
- 2.1.14 The combined A5 / A483 form part of the Trans-European Network (TEN) between Holyhead and Felixstowe, facilitating wider freight movement by road from Ireland to the Benelux countries via the UK strategic highway network. The A483 is also defined as ‘Core’ to the Strategic Network in North Wales by the NMWTRA. Both routes can be defined predominantly as Single 2 (S2) in the vicinity of the site, encompassing a one metre hard strip; however, there are short sections of 2+1 alignment on the A483. Principal junctions are predominantly accessed via roundabouts with no minor road access to the A483 or the Chirk Bypass sections of the A5.

2.2 Observed Background Network Traffic

- 2.2.1 In order to provide an indication of local network operating conditions on immediate main road routes to the Kronospan site, base traffic flow patterns have been established through the undertaking of traffic surveys in July

2017 at the following key network locations. The consideration of these locations is based on the pre-application scoping discussions with both WCBC and NMWTRA.

- B5070 Holyhead Road/Kronospan Access/Chapel Lane staggered crossroads junction.
- B5070 Holyhead Road/A5 roundabout junction.
- A5/A483 Halton roundabout junction.

2.2.2 Fully classified turning count surveys have been undertaken for a weekday 24hr period, and within school term time. **Figures TA3a-d** to this report summarise the recorded traffic flows on the immediate local highway network for the AM and PM network peak hour periods of 07:45-08:45 and 16:30-17:30 respectively, as well as the core daytime 12 hour period of 07:00-19:00 and the total daily period (see Section 4 of this TA for further information regarding peak hour assessment time periods).

B5070 Holyhead Road

2.2.3 Reference to the recorded peak hour traffic data identifies that, at the Kronospan access junction with the B5070 Holyhead Road, traffic flows on the mainline carriageway stand at c800 two-way movements during the AM peak period, whilst during the PM peak flows are higher at c1,000 two-way movements. Flows are marginally higher to the north of the Kronospan access, as would be expected given the routing restrictions on heavy vehicle movements to the south. Over the course of the 12 hour core daytime period (07:00-19:00) two-way movements stand at c9,000.

A5/B5070 Whitehurst Roundabout

2.2.4 Traffic flows on the A5, as recorded at its junction with the B5070, identify broadly similar traffic levels to those reviewed above for the B5070 near the Kronospan access i.e. two-way flows of c800 in the AM period and c1,000 in the PM period, and between 9-10,000 over the 12hr period. In terms of direction of travel, eastbound flows are marginally higher than westbound flows on the A5, although any difference is fairly limited.

A5/A483 Halton Roundabout

- 2.2.5 Finally, with regard to traffic levels at the A5/A483 Halton roundabout junction, two-way movements on the A483/A5 north-south corridor are between c2,000-2,300 during the AM and PM peak periods. Over the 12 hour period two-way movements stand at 21,500-23,700.
- 2.2.6 It should be noted that the A5/A483 Halton roundabout junction is observed to operate under variable capacity conditions, in particular during the traditional rush hour peak periods. Indeed, the junction is the subject of ongoing monitoring by WG/NMWTRA and their framework highway consultants, with a number of improvements having been made over the years. This ongoing monitoring seeks to identify any new operational issues, review the effectiveness of any improvement measures that have been implemented, as well as identify opportunities for further improvements to be made in the future. An example of recent improvements is the increase of the flare on the southbound A5 approach to the junction.

Existing Kronospan Movements

- 2.2.7 Review of the Kronospan access junction identifies that, over the course of the 12 hour daytime period, up to 278 HGVs were recorded as exiting the site towards the north, with a further 6 turning to the south. In terms of total traffic over this period, a total of 741 vehicles were recorded leaving the access, of which 76% travelled north on the B5070. Incoming movements are noted as being broadly similar, with 658 total vehicles turning into the access (74% from the north), of which 262 comprise HGVs from the north and 10 from the south.
- 2.2.8 During the AM and PM peak periods two-way vehicle movements on the Kronospan site access road were noted as between 134-149, of which between 33-43 were HGVs. Through further review of the count data it has been possible to identify a profile of HGV traffic movements to and from the

site across a 24 hour period. **Table TA 2.1** below identifies this profile of HGV movements:

Table TA2.1 – Observed 24hr Profile of HGV Movements to/from Kronospan Facility

Hour Commencing	Arrivals		Departures		Total
00:00	0.80%	3	0.53%	2	5
01:00	0.80%	3	0.53%	2	5
02:00	1.34%	5	0.53%	2	7
03:00	1.87%	7	2.12%	8	15
04:00	5.88%	22	2.38%	9	31
05:00	6.42%	24	4.50%	17	41
06:00	6.15%	23	3.97%	15	38
07:00	7.49%	28	6.35%	24	52
08:00	3.74%	14	5.56%	21	35
09:00	8.02%	30	7.14%	27	57
10:00	6.15%	23	7.14%	27	50
11:00	7.49%	28	4.76%	18	46
12:00	7.22%	27	6.61%	25	52
13:00	7.22%	27	5.82%	22	49
14:00	8.82%	33	7.67%	29	62
15:00	8.02%	30	6.35%	24	54
16:00	3.48%	13	7.41%	28	41
17:00	2.67%	10	5.03%	19	29
18:00	2.41%	9	5.29%	20	29
19:00	1.34%	5	3.97%	15	20
20:00	1.07%	4	3.44%	13	17
21:00	0.80%	3	1.06%	4	7
22:00	0.80%	3	1.59%	6	9
23:00	0.00%	0	0.26%	1	1
07:45-08:45	5.35%	20	6.08%	23	43
16:30-17:30	3.21%	12	5.56%	21	31
12hrs	72.73%	272	75.13%	284	556
Total (24hrs)	100.0%	374	100.0%	378	752

2.2.9 Review of the HGV profile data in **Table TA2.1** outlines that the majority of HGV movements are fairly evenly distributed across the daytime period extending roughly from 04:00-20:00. Maximum HGV movements occur between 14:00-15:00, when up to 62 two-way movements are recorded. Two-way HGV movements during the identified network AM and PM peak hours total 43 and 31 respectively, whilst over the course of the 12 hour daytime period (07:00-19:00) 556 two-way movements are recorded.

2.3 Review of Personal Injury Accident Data

2.3.1 Personal Injury Accident data (PIA) for the local highway network has been obtained using Crashmap.co.uk, which provides details of all PIA events attended by the police. The data is approved by the National Statistics Authority and reported on by the Department for Transport (DfT) each year. Data has been obtained for the most recently available five year search period, in line with standard practice, covering Q1 2012 – Q3 2016. The results of this search, which includes the B5070, A5 and A483 corridors, are illustrated in **Figure TA4** to this report with full results included in **Appendix TA1**.

2.3.2 A general review of the accident data illustrated in **Figure TA4** demonstrates that 14 incidents have been recorded within the study area over the five year search period. Of these incidents, 12 were recorded as being slight classification events, with two serious incidents. No fatal accident events were identified. The table below summarises the accident frequency and severity recorded over the five year search period.

Table TA2.2 – Distribution of Recorded Personal Injury Accidents

	2012	2013	2014	2015	2016	Total
Slight	2	5	2	3	0	12
Serious	1	0	0	1	0	2
Fatal	0	0	0	0	0	0
Total	3	5	3	4	0	14

2.3.3 Review of the accident information demonstrates that a total of two incidents have been recorded at the B5070 Holyhead Road/Kronospan/Chapel Lane (one slight, one serious), two incidents occurred on the Crogen/B5070 Holyhead Road junction (both slight), and one incident occurred circa 150m north of this junction (slight). Two incidents occurred on the A5 carriageway (one slight, one serious), and two incidents occurred on the A5/A483 junction (both slight). Two slight incidents were also recorded south of the A5/483 junction on the A5 carriageway, and three slight incidents were recorded north of the junction on the A483 carriageway. It should be noted that no personal injury accidents were recorded on the A5/B5070 junction.

- 2.3.4 One of the serious incidents occurred on the B5070 Holyhead Road/Kronospan/Chapel Lane junction, and involved two cars and four child pedestrian casualties. The second serious incident occurred on the A5 carriageway, and involved one car and one motorcycle.
- 2.3.5 It should be noted that just one incident involved an HGV, this incident was recorded as slight, and involved a van / goods vehicle (under 3.5 tonnes) slowing down, followed by an HGV and car colliding with the slowing van. There was also just one additional incident which involved a van / goods vehicle (under 3.5 tonnes), which was also recorded as slight, and involved a car slowing down in front, and the van colliding with the rear of the car. Both of these incidents occurred on the A483 to the north of its roundabout junction with the A5.
- 2.3.6 The main causation factors of the 14 incidents that occurred within the study area within the five year period have been identified as:
- Failure to respond to slowing / stopping vehicle in front;
 - Failure to give way when turning;
 - Overtaking without due care;
 - Pedestrians failing to observe traffic; and
 - Vehicles performing dangerous manoeuvres in the carriageway.
- 2.3.7 Given the above review of accident history, which identifies no evidence of accident or road safety issues either relating to operation of the existing Kronospan facility, or to the use of the local highway network by HGVs, it is concluded that there is no reason to anticipate that the OSB facility development proposals at the Kronospan site would result in a material detrimental effect on local highway safety conditions.

2.4 Sustainable Transport Connections

- 2.4.1 This section reviews the existing sustainable transport links that are available for employees / visitor travel to / from the Kronospan site. The site represents a well-established employer within the Chirk area, and is

accessible by sustainable modes for the majority of residents that live in Chirk.

Walking & Cycling

- 2.4.2 The Institute of Highways & Transportation (IHT) guidance 'Providing for Journeys on Foot' suggests that a 1.0km walk catchment represents an 'acceptable' walk distance to a place of work for commuting purposes, with a 'preferred maximum' catchment being 2.0km. In terms of access to public transport, the IHT document 'Planning for Public Transport in Developments' (1999). Identifies a recommended maximum walk distance of 400 metres to a bus stop.
- 2.4.3 **Figure TA5** to this report illustrates a 1.0km and 2.0km walking iso-distance catchment measured from the centre of the proposed new development site and demonstrates that such walking catchments include for the whole of the Chirk Area, including Chirk rail station.
- 2.4.4 In addition to walking connections, the pedal cycle has been identified as being an acceptable travel mode for journeys of up to 5km. **Figure TA6** to this report illustrates the 5km cycle catchment from the site, and demonstrates that as well as the whole of Chirk lying within an acceptable catchment, the southern extents of Cefn-Mawr, to the north, and the settlements of Preesgween and Weston Rhyn, to the south, would lie within an appropriate cycle catchment.
- 2.4.5 Details of available local cycling routes and connections are illustrated in **Figure TA7** to this report and demonstrate that a number of traffic free cycle routes are available within a short cycle ride of the site, including a traffic free cycle route located along the western boundary of the site, as well as an on road route on the southern boundary of the site.

Access to Buses

- 2.4.6 Frequent public transport links are available from within an acceptable walking distance of the Kronospan site. Bus stops are located immediately

adjacent to the site entrance, providing direct connections to Wrexham, Ruabon, Gobowen and Oswestry at half-hourly intervals during the day. The waiting provision includes timetable information and a shelter in each direction. A bus layby is provided for the northbound stop, whereas the southbound stop is accommodated in-carriageway.

- 2.4.7 Existing bus routes serving the local stops are illustrated in **Figure TA8** to this report, with full service timetables attached at **Appendix TA2** and summarised in **Table TA2.3** below. **Table TA2.3** demonstrates that regular connections are available to Wrexham town centre.

Table TA2.3 – Local Bus Services from Bus Stops Close to the Site

Service	Operator	Via	Daytime Headway
2: Wrexham – Oswestry	Arriva	Ruabon - Lodgevale Estate (Chirk) – Gobowen	Hourly
2A: Wrexham – Oswestry	Arriva	Ruabon – Chirk Green – Gobowen	Hourly
2C: Wrexham – Cefn Mawr	Arriva	Rhostyllen – Johnstown – Ruabon – Plas Madoc – Chirk	07:40, 17:40, 18:10 & 18:40 only

Access to Rail Services

- 2.4.8 Chirk rail station is located approximately 1.3 km from the site – c15 minutes on foot. It is served by a two-hourly service between Holyhead and Birmingham International, as well as a two-hourly service between Holyhead and Cardiff Central. The existing service pattern, summarised below, provides an hourly connection to the major population centres of Wrexham, Chester and Shrewsbury, as well as the local settlements of Ruabon and Gobowen.

Table TA2.4 – Local Rail Services from Chirk Rail Station

Service	Operator	Route	Daytime Headway
Holyhead – Birmingham International	Arriva Wales	Bangor – Chester – Wrexham – Shrewsbury – Wolverhampton – Birmingham New St	Two-hourly
Holyhead – Cardiff	Arriva Wales	Bangor – Chester – Wrexham – Shrewsbury – Hereford – Abergavenny	Two-hourly

Summary

- 2.4.9 Overall it is concluded that the proposal site represents a sustainable location for an employment development, being located within an acceptable walk/cycle catchment of local residential areas, as well as being accessible by both bus and rail services to/from key local settlements slightly further afield. These services are anticipated to reduce the need for employees at the site to utilise the car for commuting journeys.

3.0 EXISTING KRONOSPAN SITE OPERATIONS

3.1 Background

3.1.1 The Kronospan plant is well established within the Chirk area, having commenced operations in the early 1970s. It manufactures wood-based panels and other wood products. The primary products manufactured at the site are chipboard and medium density fibreboard (MDF), from this a number of secondary products are produced such as laminate flooring, worktops and melamine faced boards. The site provides direct employment to over 630 staff; however, it is estimated that the facility also provides indirect employment to 6,000 people in industries relating to the manufacturing and supply chains associated with the operations at the site.

3.1.2 The entirety of the Kronospan site covers an area of circa 40ha, with circa 14ha of this developed with industrial buildings and plant. A number of industrial process facilities are located in the west portion of the site, with a number of other process buildings located in the northern half of the site. The site car park, reception building, weighbridge and main site offices are located in the south eastern corner of the site to the south of the MDF/particle board manufacturing buildings.

3.1.3 The western perimeter of the Kronospan site is formed by the Shrewsbury to Chester railway. Improved railway siding facilities have been constructed within the site to enable an increased volume of timber to be imported by rail. As noted in Section 2 of this TA, the site is accessed via a priority controlled give-way T-junction with the B5070 Holyhead Road, which runs in a north south direction to the east of the site.

3.2 Current & Historical Site Operation

3.2.1 Details of both the current and historical operation of the existing Kronospan manufacturing facility site have been established through reference to both operational data, as well as the traffic surveys undertaken at the site access.

Current Operational Trends

- 3.2.2 Section 2 of this TA provides a review of the observed levels of Kronospan related traffic recorded on the day of the July 2017 traffic surveys. This review identifies a total of 278 outbound HGV movements over the course of the 12 hour period (07:00-19:00) and 262 inbound movements, resulting in a total two-way flow of 540 HGV movements. Further review of the survey data identifies that, over the course of the 24 hour survey period, two-way HGV movements totalled 721 (354 in / 367 out).
- 3.2.3 With regard to total traffic, including car/LGV movements, a total of 1,461 two-way movements are noted at the site over the 24 hour period (723 in / 738 out), falling to 1,045 movements over the 12 hour period (484 in / 561 out).
- 3.2.4 Reference to information provided by Kronospan has identified that, during the busiest period of operations in 2016 (May-June) the number of HGV loads exiting the site averaged 343 per day, approximately equating to 686 two-way HGV movements. It should be noted that this figure is based on weighbridge data and so is unlikely to include other HGV movements which don't pass over the weighbridge, such as those which are empty. These figures can therefore be considered comparable to those identified in the 2017 survey data for the Kronospan site access.

Historical Operational Trends

- 3.2.5 In 2012 a planning application was submitted to WCBC for the development of a biomass facility and recycled wood fibre offloading and screening facility at the Kronospan site. As part of the 2012 application, a Transport Assessment was produced by Axis, which sought to identify the transport related effects of those development proposals.
- 3.2.6 In order to inform that review, traffic surveys were undertaken at the site entrance in January 2011. In summary a total of 1,736 two-way vehicle movements were recorded at the site access over the duration of the survey (553 in / 493 out), of which 690 were HGVs (320 in / 370 out).

- 3.2.7 Comparison of this historical data with that observed for current operations, suggests a broadly similar level of operation at the site, with c350 HGV loads per day being recorded.
- 3.2.8 Further information provided by the operator, has identified that the Kronospan facility has operated at a higher capacity prior to 2010. Reference to weighbridge records from 2006 identifies that c460 loads per day were recorded as leaving the manufacturing facility. This level of HGV loads would equate to c900 two-way HGV movements per day.

4.0 DESCRIPTION OF THE DEVELOPMENT PROPOSALS

4.1 Overview

4.1.1 As noted in Section 1 of this report, the Proposed Development is for the construction and operation of an oriented strand board production facility at the existing Kronospan manufacturing plant. The Proposed Development is formed of two main components:

- a new OSB blending building where the material would be mixed with resin and wax; and
- the vertical extension of the existing press hall to accommodate a new OSB press and OSB forming line.

4.1.2 At present OSB is manufactured at European Kronospan sites and imported to the UK to meet customer needs. The Proposed Development would allow Kronospan to manufacture this product in the UK at the Chirk manufacturing facility, enhancing the sites capability and improving the long term sustainability of the business at the Chirk manufacturing site.

4.1.3 The Proposed Development is part of an ongoing development programme to deliver environmental improvements at the site and ensure the long term economic viability of the manufacturing facility. The development programme involves the submission of four planning applications to Wrexham County Borough Council over 2017 - 2018. These are as follows:

- Wood Chip Preparation Building and WESP Chip Dryer (submitted May 2017, approved August 2017, Reference: P/2017/0416)
- Log Delivery and Transfer System and Building to House a Wood Chipping and Flaking System (submitted August 2017, approved May 2018, Reference: P/2017/0699);
- Raw Board Storage (Planning permission refused 6th November 2017, granted at Appeal 22nd May 2018 Reference: APP/H6955/A/18/3193142); and
- Oriented Strand Board (OSB) Facility (this application).

- 4.1.4 A plan view of the Proposed Development is shown on **Drawing no. 2197-01-02 Rev B** to this report. The planning application covers a total area of 0.248ha.

4.2 **Proposed Site Operations**

- 4.2.1 The OSB production facility would be used to accommodate an OSB blending station, board press and forming line which would enable Kronospan to produce OSB at the manufacturing facility in Chirk. Round wood is used for the production of OSB. This would be delivered to the site via rail and HGV deliveries. Exports of product from the site would be undertaken purely by HGV.

- 4.2.2 The proposed OSB facility is proposed to be operated 24 hours a day as per the existing site operations.

4.3 **Employment Opportunities**

- 4.3.1 It is anticipated that the proposed OSB facility would create 100 new employment opportunities at the site. However, some of the other proposed improvements at the site would involve increased automation and improved manufacturing efficiency, with the result that fewer staff would be required to deliver the same or increased manufacturing output. Accordingly, the additional jobs created by the OSB facility would likely offset the reduced staff numbers i.e. there would be no/limited net change in employment at the Kronospan facility as a consequence of the OSB facility proposals.

4.4 **Changes in Traffic Levels Arising from Development**

- 4.4.1 As identified above, it is envisaged that employment levels at the Kronospan facility are unlikely to change as a result of the proposed OSB facility. Whilst the new facility would create up to 100 new employment opportunities, it is likely that this would be offset by the proposed increases in overall site efficiencies. As a result, there is unlikely to be any notable

change in the quantum of light vehicle traffic as a result of the proposed OSB facility.

- 4.4.2 With the above in mind, any changes in traffic at the Kronospan site are likely to be limited to HGV traffic associated with the transportation of raw materials and finished product. This section of the TA provides a breakdown of this anticipated change in HGV traffic levels.

Incoming Materials

- 4.4.3 Operation of the OSB facility would require the importation of up to 634,000 tonnes per annum (tpa) of raw materials to the site. Importation of these materials is proposed to be undertaken using both the existing rail head facilities as well as road haulage.

- 4.4.4 Of the total tonnage imported, it is envisaged that up to 240,000tpa could be transported to the site by rail. This would therefore result in c394,000tpa being brought to the site by road in HGVs.

- 4.4.5 With regard to the transportation of materials by road, HGVs transporting material to the Kronospan site are of the articulated flat-bed type, with a Gross Vehicle Weight (GVW) of 44t. On the basis of existing operations at the Kronospan site, HGV payloads are recorded as typically being of the order of 24t. Consequently the importation of material to the new facility would give rise to 16,400 loads per annum. Based on a total of 260 days per year over which deliveries are anticipated to take place at the site, this would therefore equate to an additional 63 HGV loads per day to the site, or 126 two-way HGV movements.

Exported Product

- 4.4.6 As noted in Section 3 of this TA, all OSB product would be exported from the site by HGV. As with imported materials, HGVs used to transport the OSB product would be of the articulated flat-bed type, with a GVW of 44t. Again, payloads are anticipated to be in line with those observed at the site for existing product exports, at a typical level of 24t. It is anticipated that

the total number of HGV loads per year exporting OSB product would stand at 12,125, equating to 47 loads per day, or 94 two-way HGV movements.

Changes to Existing Product Transportation

- 4.4.7 In addition to the traffic that would be generated as a result of the new OSB facility, a number of existing materials and product transportation movements to and from the Kronospan facility would cease. These comprise imported boards. Brought in boards currently comprise a total of 4,778 loads per year. Cessation of these activities would therefore result in the associated cessation of up to 19 HGV loads per day, or 38 two-way HGV movements.

Total Change in HGV Traffic Levels

- 4.4.8 With the above in mind, the following summarises the envisaged change in HGV traffic levels to the site as a result of the proposed OSB facility:

- 16,400 new incoming loads per annum + 63 loads per day;
- 12,125 new outgoing loads per annum + 47 loads per day;
- 4,778 ceased loads per annum - 19 loads per day;

Resulting in

- 23,747 net new loads per annum + 91 loads per day.

- 4.4.9 In summary, the OSB facility would result in an additional 91 HGV loads per day, or 182 two-way HGV movements, across the local and strategic highway networks.

4.5 Effects of Railhead on OSB Traffic Levels

- 4.5.1 As noted in both Section 3 and above, the existing railhead is used for the importation of raw materials to the Kronospan facility, and has enabled the facility to significantly reduce the quantum of materials that are brought by road. Indeed, review of current operational information for the Kronospan

site identifies that up to 16,632 HGV loads per annum are “removed” from the highway network as a result of materials being brought to the site by rail – this represents the avoidance of 64 HGV loads per day, or 128 two-way HGV movements.

4.5.2 With regard to the proposed OSB facility it is noted above that up to 38% of the total imported raw materials would be transported to the site by rail. This will be facilitated via an increase in both the length and frequency of trains delivering to the Kronospan railhead. 38% of the total imported tonnage would amount to the equivalent of 10,000 HGV loads per annum, which are avoided from having to travel on the highway network. This represents the avoidance of approximately 39 HGV loads per day, or 78 two-way HGV movements.

4.5.3 This saving in the number of HGV loads travelling by road is significant, and represents a saving of approximately 30% of the potential total HGV loads. Importing wood via rail has transportation and environmental sustainability benefits and as such Kronospan seek to maximise the opportunity to use this form of transport. Kronospan will continue to liaise with Network Rail to increase its use of the rail system, however, there remain restrictions on the use of this line for freight. Nonetheless, the ability to import such large volumes of wood using the existing capacity represents a significant benefit in terms of road traffic and highlights the suitability of this site for the proposed development.

4.6 **Daily Profile of OSB Development Traffic**

4.6.1 The daily profile of HGVs delivering raw materials to the OSB facility, and exporting the OSB product, is anticipated to reflect that of current Kronospan operational activity. Table TA2.1 within this report outlines the daily profile of HGV arrivals and departures to the Kronospan facility over the course of the 24 hour survey period, as undertaken in July 2017. Application of the observed current daily profile of HGV movements to the anticipated quantum of HGV traffic associated with the OSB facility identifies the following profile of OSB related HGV movements:

Table TA4.1 – Anticipated 24hr Profile of HGV Movements to/from Proposed OSB Facility

Hour Commencing	Arrivals		Departures		Total
00:00	0.80%	1	0.53%	0	1
01:00	0.80%	1	0.53%	0	1
02:00	1.34%	1	0.53%	0	2
03:00	1.87%	2	2.12%	2	4
04:00	5.88%	5	2.38%	2	8
05:00	6.42%	6	4.50%	4	10
06:00	6.15%	6	3.97%	4	9
07:00	7.49%	7	6.35%	6	13
08:00	3.74%	3	5.56%	5	8
09:00	8.02%	7	7.14%	7	14
10:00	6.15%	6	7.14%	7	12
11:00	7.49%	7	4.76%	4	11
12:00	7.22%	7	6.61%	6	13
13:00	7.22%	7	5.82%	5	12
14:00	8.82%	8	7.67%	7	15
15:00	8.02%	7	6.35%	6	13
16:00	3.48%	3	7.41%	7	10
17:00	2.67%	2	5.03%	5	7
18:00	2.41%	2	5.29%	5	7
19:00	1.34%	1	3.97%	4	5
20:00	1.07%	1	3.44%	3	4
21:00	0.80%	1	1.06%	1	2
22:00	0.80%	1	1.59%	1	2
23:00	0.00%	0	0.26%	0	0
07:45-08:45	5.35%	5	6.08%	6	11
16:30-17:30	2.14%	3	6.08%	5	8
12hrs	72.73%	66	75.13%	68	134
Total 24hrs	100.0%	91	100.0%	91	182

4.6.2 Review of the above profile identifies that just 11 additional two-way HGV movements are anticipated during the AM network peak hour (5 in / 6 out), falling to 8 movements during the PM peak period. This represents a maximum of 1 additional HGV movement every 6 minutes. Over the course of the core 12 hour daytime period a total of 134 additional two-way HGV movements are anticipated (66 in / 68 out)

4.6.3 During the busiest hour of HGV movements (14:00-15:00) just 15 two-way movements are anticipated (8 in / 7 out), representing 1 additional HGV movement every 4 minutes. Such increases in HGV levels are considered

unlikely to have any notable effect on either the local or strategic highway network, either in operational or safety terms.

4.7 **Distribution and Assignment of OSB Development Traffic**

4.7.1 With regard to the distribution of OSB development traffic across the local and strategic highway network, it is envisaged that almost all would route towards the A5/A48 roundabout, with a 50/50 distribution from that point between the route of the A483 to the north and the A5 to the south. With this assumption in mind, **Figure TA9** to this report illustrate the anticipated distribution of development traffic across the highway network. **Figures TA10a-d** go on to illustrate the assignment of development traffic on the basis of the envisaged distribution.

5.0 KEY ASSESSMENT PARAMETERS

5.1 Assessment Time Periods

5.1.1 As identified in Section 2 of this report, review of background daily traffic patterns derived from the July 2017 traffic surveys suggests that maximum background traffic levels over the local highway network are experienced during the following time periods:

- Local highway network AM Peak hour: 07:45-08:45;
- Local highway network PM Peak hour: 16:30-17:30.

5.1.2 In practice these AM & PM peak periods are also likely to continue to represent the maximum traffic demand periods following incorporation of the anticipated OSB development related traffic flows. Accordingly these time periods have been utilised for the network capacity appraisals included in this TA report. In addition to the network peak hours, this TA also considers the effects of development over the core weekday daytime 12 hour period of 07:00-19:00.

5.2 Future Year Traffic Growth Assumptions

5.2.1 It is anticipated that, based upon current market conditions, the development of the OSB facility could be completed and fully operational by late 2018. Accordingly a 2018 opening year date has been utilised for core traffic demand assessments. In order to account for future network traffic conditions, an additional future design year of 2023 has been considered for all capacity related assessments. This represents 5 years beyond the projected commencement of operations at the development.

5.2.2 Guidance published by the DfT identifies that future estimates of traffic should be made through the application of regional growth factors derived from the National Transport Model (NTM). NTM forecasts give traffic growth by region, road type and whether the area is built up or not. These forecasts are then adjusted by local TEMPRO factors to reflect local traffic trends. **Appendix TA3** provides the TEMPRO growth factor outputs for the

immediate Middle Layer Super Output area of Wrexham 019 for the above future year periods, whilst **Table TA5.1** summarises the results.

Table TA5.1: TEMPRO Adjusted NTM Growth Factors

	2017-2018	2017-2023
Weekday AM Peak	1.0146	1.0746
Weekday PM Peak	1.0144	1.0740
Average Weekday	1.0152	1.0780

5.2.3 The TEMPRO adjusted NTM growth factors have been applied to the 2017 background traffic flows presented in **Figures TA3a-d** to produce the 2018 opening year & 2023 future year baseline traffic flows illustrated respectively at **Figures TA11a-d and TA12a-d**.

5.3 Committed Development Traffic

5.3.1 During pre-application discussions, neither WCBC nor WG/NMWTRA has identified any specific committed developments which would need to be taken into account within this assessment. Axis has, however, been made aware of the recently approved Welsh Dragon development scheme, on land to the southeast of the A5/A483 Halton roundabout junction. This development originally received planning permission in 2011, which then lapsed. The 2016 application therefore sought a new permission.

5.3.2 A TA for the 2016 Welsh Dragon development application was produced by Crowd Dynamics, which essentially sought to update the TA that was submitted with the original application in 2010. Review of the findings of the Crowd Dynamics TA identifies that the proposed development is anticipated to give rise to minimal proportional increases in traffic at the A5/A483 junction, even during the very busiest periods anticipated – less than 4% during the busiest hour of the busiest day of the year. Under normal conditions the development is anticipated to give rise to increases of c2%. The Crowd Dynamics TA also notes that such levels of impact are notably below the typical variation in flow levels recorded at the junction.

5.3.3 Finally, it is most likely that the peak trip attraction of the Welsh Dragon development would occur during off-peak daytime periods, when traffic

levels on the highway network are typically lower. With the above considerations in mind, the Welsh Dragon development has not specifically been accounted for within this assessment.

- 5.3.4 Despite there being no specific committed developments considered within the assessment, TEMPRO growth factors for the assessments of future year development impact are included as noted above. Given that TEMPRO adjusted National Transport Model (NTM) factors already include for both local housing and employment growth projections (as derived from such sources as Local Plans), the effects of any notable committed development schemes should be inherently accounted for within the application of general network growth.

5.4 **Predicted Future Year Traffic Flows**

- 5.4.1 The anticipated assignment of development trips (as identified in Section 4) has been added to the projected opening year and future year baseline network traffic movements identified at **Figures TA11a-d** and **TA12a-d**. The resulting 2018 opening year and 2023 future year network traffic flows used for the assessment of development impact are illustrated in **Figures 13a-d** and **14a-d**.

6.0 ASSESSMENT OF ANTICIPATED DEVELOPMENT TRAFFIC IMPACT

6.1 Introduction

6.1.1 This section of the report considers the operation of both the local and strategic highway network within the study area, and the ability of this network to accommodate the OSB facility traffic flow movements, as predicted in Section 4. Assessment of the impact of the development proposals has been carried out through the consideration of both link flow impact as well as junction operational assessment across the study area.

6.1.2 The assessments of link impact have been undertaken for the anticipated opening year of 2018, which should provide the maximum proportional impact of the development proposals. The assessments of junction capacity have been undertaken for both the anticipated 2018 opening year as well as the future design year of 2023. This future year would represent the worst case assessment conditions for the junction when compared to the 2018 opening year conditions.

6.2 Comparison to Historical Operational Demand

6.2.1 When considering the practical operational impact of the proposed OSB facility, it is important to understand the historical context of the traffic levels from the Kronospan site that have previously operated over the local network for many years. As identified in Section 3 this report, the Kronospan site has historically generated HGV levels in excess of those currently experienced, as well as marginally in excess of those anticipated under future operation inclusive of the OSB facility scheme – 462 historically compared to 458 once the OSB facility is operational.

6.2.2 Given that such historical peak site HGV traffic demands have been previously judged acceptable as part of the consideration and approval of historical planning submissions, and have been demonstrated to have been successfully accommodated by the local highway network without any known operational capacity or safety issues, it could be reasonably concluded that the proposed OSB facility, and its associated HGV traffic, is

unlikely to result in any material detrimental impact on the operation of the local highway network.

6.3 **Link Flow Impact Assessment: Local Road Network**

6.3.1 Notwithstanding the above comparison to historical site operation, in order to ensure the most robust assessment of the traffic related effects of the OSB facility, any appraisal of network effects needs to reflect current operational conditions at the Kronospan site. Accordingly, link and junction operational assessments have been undertaken against the projected baseline traffic flow conditions outlined in Section 5 of this report.

6.3.2 Link flow operational assessments have been carried out for all links within the study area which would form part of the route for OSB related HGV movements. These sections of route network would experience the maximum link flow associated with the proposed OSB facility, given that they would accommodate all its related operational HGV trips. Should link impact levels on these immediate sections of route prove to lie within appropriate thresholds, it can reasonably be concluded that development traffic at more remote network locations would also be within suitable thresholds.

6.3.3 Reference to Institution of Highways and Transportation (IHT) "Guidelines for Traffic Impact Assessment" suggests that more detailed analysis of highway impact and/or capacity improvements is only likely to be required where either:

- Traffic to/from the development exceeds 10% of existing two-way traffic on the adjoining highway; or,
- Where traffic to/from the development exceeds 5% of the existing two-way traffic flow on the adjoining highways at locations where traffic congestion exists within the assessment period or in other sensitive locations.

6.3.4 March 2007 Welsh Government Guidance TAN18 Annex E (para. E4) provides further advice in respect of likely material increases in traffic levels,

specifically occasions under which additional analysis might be required for developments affecting the Welsh Strategic Road Network. In this case TAN18 guidance states:

“When assessing whether or not to consult the Assembly...local planning authorities must give full consideration to the effects of a development’s traffic would have at a junction, particularly in respect of the additional turning movements created. As a broad guide the Assembly Government would regard an increase in turning movements in the order of 5% as material in most cases, that is, a 5% increase of traffic using any link of the junction. Where the capacity of the junction is, or is near to, being exceeded, a smaller percentage increase on a link would normally be material.”

6.3.5 It is therefore concluded that a 5% threshold represents a reasonable guidance threshold for the assessment of link impact on the highway network within the study area. It should be recognised, however, that a simple percentage impact test can represent a crude tool, hence its removal from assessment guidance outlined within the 2007 DfT document “Guidance on Transport Assessment”, which applied until recently in England. In the context of routes which currently operate with relatively low levels of background flow, a very small level of predicted development traffic can give rise to the calculation of a significant percentage change value, even though the combined background and development traffic would still be substantially below link capacity thresholds.

6.3.6 **Tables TA6.1 & TA6.2** 2 below demonstrate the predicted changes in two-way link flows on the assessed highway network, as a result of the proposed OSB facility development, during the 2018 opening year.

Table TA6.1 – Predicted 2018 Opening Year Proportional Link Impact – Peak Hours

Two-way Link Flow	AM Peak Period			PM Peak Period		
	Background	Proposed Development	% Increase	Background	Proposed Development	% Increase
B5070 (N of Access)	831	11	1.3	1,082	8	0.7
B5070 (S of A5)	882	11	1.2	1,091	8	0.7
A5 (E of B5070)	906	11	1.2	998	8	0.8
A5 (W of A5/A483)	908	11	1.2	1,010	8	0.8
A483 (N of A5/A483)	2,377	6	0.3	2,402	4	0.2
A5 (S of A5/A483)	2,025	6	0.3	2,156	4	0.2

(Two-way traffic flows – All Traffic)

Table TA6.2 – Predicted 2018 Opening Year Proportional Link Impact – 12 Hour Period

Two-way Link Flow	12 Hour Period		
	Background	Proposed Development	% Increase
B5070 (N of Access)	9,127	134	1.5
B5070 (S of A5)	8,755	134	1.5
A5 (E of B5070)	9,788	134	1.4
A5 (W of A5/A483)	9,919	134	1.4
A483 (N of A5/A483)	24,037	67	0.3
A5 (S of A5/A483)	21,884	67	0.3

(Two-way traffic flows – All Traffic)

6.3.7 The above exercise demonstrates that changes in total daily traffic over the immediate local network as a result of the operation of OSB production facility are likely to be extremely low, being less than 1.5% of baseline traffic volumes. Maximum link impact is predicted on the immediate section of the B5070 Holyhead Road to the north of the site, where the proposed development could result in total traffic impact demand of 0.7% - 1.5% between the assessed time periods. Such results are well below the identified 5% link impact threshold and suggest that the operation of the proposed OSB facility would not result in any material effects on either local or strategic highway network operational performance. On this basis it is considered that the impact of the proposed development would be negligible.

6.4 Junction Operational Impact

6.4.1 Notwithstanding the results of the above proportional link flow impact exercise, further consideration has been given to the potential effects of development traffic on the capacity of the key highway network junctions within the study area. Accordingly assessments of junction capacity have been undertaken for the AM and PM peak hour periods (07:45-08:45 & 16:30-17:30) at the following highway network locations:

- B5070 Holyhead Road/Kronospan Access/Chapel Lane staggered crossroads junction;
- B5070 Holyhead Road/A5 roundabout junction; and,
- A5/A483 Halton roundabout junction.

6.4.2 The staggered site access T-junction has been modelled using the PICADY module within the TRL software package Junctions 8, whilst both roundabout junctions have been assessed using ARCADY module within the TRL software package Junctions 9. Both TRL software packages split traffic flows into 15-minute time segments within the model inputs. The results generated in the models indicate the peak Ratio of Flow to Capacity (RFC) in any individual peak and likely traffic queues. RFC values between 0.00 and 0.85 are generally accepted as representing stable and acceptable operating conditions. Values between 0.85 and 1.0 represent variable operation but still within theoretical capacity i.e. possible queues building up at the junction during the period under consideration and increases in vehicular delay moving through the junction. RFC values in excess of 1.0 represent overloaded conditions i.e. congested conditions.

6.4.3 In order to provide a full appraisal of the specific effects of the proposed development, two key future year scenarios have considered, which are outlined in further detail below:

- “Do Nothing” conditions – baseline future year conditions without the construction of the proposed OSB facility; and,
- “Do Something” conditions – baseline future year conditions with the construction of the proposed OSB facility.

6.4.4 Consideration of the “Do Nothing” conditions should provide a clear benchmark of the likely future operational state of the local highway network to the Kronospan facility, and set the impact of the proposed OSB facility into context.

6.4.5 The following sections outline the results of the junction capacity assessment, summarising the 2023 future year assessments in particular, as this period would represent the worst case assessment conditions for the junction when compared to the 2018 opening year conditions. The results of the junction assessments are summarised in turn below, with the full results provided at **Appendices TA4, TA5 & TA6** respectively.

B5070 Holyhead Road/Kronospan Access/Chapel Lane

6.4.6 The results of the Junctions 8 assessments for the Kronospan staggered site access junction are summarised in **Tables TA6.3 & TA6.4** below.

Table TA6.3: B5070 Holyhead Road/Kronospan Access/Chapel Lane – 2023 Future Year “Do Nothing” Conditions

	AM Peak (07:45-08:45)		PM Peak (16:30-17:30)	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Stream B-ACD	0.14	0.16	0.16	0.19
Stream AB-CD	0.26	0.69	0.12	0.31
Stream D-AB	0.09	0.20	0.22	0.35
Stream D-C	0.02	0.02	0.10	0.12
Stream CD-AB	0.10	0.24	0.09	0.18

Arm A – B5070 (N)

Arm B – Chapel Lane

Arm C – B5070 (S)

Arm D - Site Access

Table TA6.4: B5070 Holyhead Road/Kronospan Access/Chapel Lane – 2023 Future Year “Do Something” Conditions

	AM Peak (07:45-08:45)		PM Peak (16:30-17:30)	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Stream B-ACD	0.14	0.16	0.16	0.20
Stream AB-CD	0.29	0.80	0.15	0.45
Stream D-AB	0.14	0.31	0.24	0.40
Stream D-C	0.02	0.02	0.11	0.12
Stream CD-AB	0.11	0.25	0.09	0.18

Arm A – B5070 (N)

Arm B – Chapel Lane

Arm C – B5070 (S)

Arm D - Site Access

- 6.4.7 The above results demonstrate that, during the assessed “Do Something” conditions, maximum RFCs at the site access junction would be just 0.29, with very little in the way of queuing predicted. Comparison against the “Do Nothing” results identifies that the proposed development of the OSB facility would give rise to a strictly limited impact upon the junction’s capacity – maximum RFC values increase from 0.26 to the abovementioned 0.29.

A5/B5070 Whitehurst roundabout

- 6.4.8 The results of the Junctions 9 assessments for the A5/B5070 Whitehurst roundabout junction are summarised in **Tables TA6.5 & TA6.6** below.

Table TA6.5: A5/B5070 Holyhead Road – 2023 Future Year “Do Nothing” Conditions

	AM Peak (07:45-08:45)		PM Peak (16:30-17:30)	
	RFC	Queue (PCU)	RFC	Queue (PCU)
A5 (E)	0.33	0.5	0.36	0.6
B5070	0.41	0.8	0.46	0.9
A5 (W)	0.30	0.5	0.46	0.9

Table TA6.6: A5/B5070 Holyhead Road – 2023 Future Year “Do Something” Conditions

	AM Peak (07:45-08:45)		PM Peak (16:30-17:30)	
	RFC	Queue (PCU)	RFC	Queue (PCU)
A5 (E)	0.33	0.5	0.36	0.6
B5070	0.43	0.8	0.47	0.9
A5 (W)	0.33	0.5	0.46	0.9

- 6.4.9 The above results again demonstrate that development of the proposed OSB facility would give rise to a negligible change in operation conditions at the A5/B5070 roundabout junction. During the assessed “Do Something” conditions, maximum RFCs at the site access junction would be just 0.47, up from 0.46 in the “Do Nothing” conditions, with very little in the way of queuing predicted.

A5/A483 Halton roundabout

- 6.4.10 The results of the Junctions 9 assessments for the A5/A483 roundabout junction are summarised in **Table TA6.7 & TA6.8** below.

Table TA6.7: A5/A483 – 2023 Future Year “Do Nothing” Conditions

	AM Peak (07:45-08:45)		PM Peak (16:30-17:30)	
	RFC	Queue (PCU)	RFC	Queue (PCU)
A483 (N)	0.98	22.7	0.98	20.6
Unnamed Road	0.19	0.2	0.21	0.3
A5 (S)	0.72	2.8	0.74	3.0
A5 (W)	0.53	1.2	0.60	1.6

Table TA6.8: A5/A483 – 2023 Future Year “Do Something” Conditions

	AM Peak (07:45-08:45)		PM Peak (16:30-17:30)	
	RFC	Queue (PCU)	RFC	Queue (PCU)
A483 (N)	0.99	26.0	0.98	22.3
Unnamed Road	0.20	0.3	0.21	0.3
A5 (S)	0.73	2.9	0.75	3.1
A5 (W)	0.56	1.4	0.61	1.6

- 6.4.11 Review of the results above identifies that the A5/A483 would be subject to variable operational conditions, during the future year “Do Nothing” scenario. Whilst the majority of approach arms are anticipated to operate well below the 0.85 threshold for such conditions, the A483(N) approach arm is anticipated to operate with RFCs of 0.98 during both peak periods. Queuing is anticipated to reach a maximum of 22.7 PCUs.
- 6.4.12 It should be noted, however, that in Section 2 of this report it is highlighted that the junction currently operates under variable conditions during the peak periods. Crucially, the above review of the effects of OSB development related traffic upon the operation of this junction identifies that any impact would be negligible. During the assessed “Do Something” conditions, maximum RFCs at the site access junction would increase by just 0.01 from those anticipated under “Do Nothing” conditions.

- 6.4.13 In summary, it is concluded that traffic associated with the operation of the proposed OSB facility would give rise to only a negligible impact upon the operation of the local highway network, in junction capacity terms.

7.0 SUMMARY & CONCLUSIONS

7.1 Introduction

7.1.1 This Transport Assessment (TA) has been prepared by Axis, on behalf of Kronospan Ltd., to consider highways and transport issues related to proposals for the development of an oriented strand board (OSB) production facility at the existing Kronospan facility in Chirk, Wrexham.

7.1.2 This report has been prepared in accordance with National Planning Policy Guidance (NPPG), and supporting documents, with the scope and nature of the assessment matters reflecting the extent of highway and transport issues identified as being likely of material interest to highways officers at both Wrexham County Borough Council and the Welsh Government/North and Mid-Wales Trunk Road Agency.

7.2 Site Location & Existing Conditions

Existing Local Network Conditions

7.2.1 The Kronospan plant occupies a large site to the immediate north west of Chirk town centre, with access taken from the B5070 Holyhead Road which lies to the eastern frontage of the site. The western perimeter of the Kronospan site is formed by the Shrewsbury to Chester railway, beyond which lies the Llangollen Canal. To the south of the site lies the Cadbury's Mondelez factory, whilst to the north the site is bounded by a sewerage pumping station and Kronospan owned property.

7.2.2 The B5070 Holyhead Road is linked to the strategic highway network via a roundabout junction with the A5 to the north of the town. This in turn links to Mid-Wales to the west and the A5/A483 to the east. The A5/A483 provides onward connections to the rest of the UK via the strategic highway network.

7.2.3 The main Kronospan site access links to the B5070 Holyhead Road via a priority junction. The connection has been designed to accommodate the

existing HGV movements associated with the Kronospan operation, and possesses radii of approximately 12 metres for the left turn out of the site. Skid-resistant surface dressing has been applied to the B5070 Holyhead Road at the site entrance, and an on-carriageway cycle lane is provided.

- 7.2.4 It is concluded that the existing main vehicle access onto the B5070 Holyhead Road represents a suitable layout to support additional operations at the Kronospan site.

Observed Background Network Traffic

- 7.2.5 In order to provide an indication of local network operating conditions on immediate main road routes to the Kronospan site, average weekday traffic surveys have been undertaken at three key locations on the local highway network during July 2017, as identified below:

- B5070 Holyhead Road/Kronospan Access/Chapel Lane staggered crossroads junction;
- A5/B5070 Whitehurst roundabout junction; and,
- A5/A483 Halton roundabout junction.

- 7.2.6 The results of the surveys identify that the immediate B5070 Holyhead Road route is not generally heavily trafficked, with observed background demand typically of the order of between 800-1,000 two-way vehicle movements per hour during AM and PM peak hour periods. Traffic levels on the A5 route corridor are noted as being broadly similar to the B5070 Holyhead Road, with two-way flows of between 800-1,000 recorded during the rush hour peak periods. As would be expected, traffic levels on the A5/A483 route corridor are notably higher, at between c2,000-2,300 two-way movements during the rush hour peak periods.

Review of Personal Injury Accident Data

- 7.2.7 Personal Injury Accident data (PIA) for the immediate local highway network has been obtained from Crashmap.co.uk, which provides PIA data collected by the police. Data has been collected for the five year period of

Q1 2012 – Q3 2016. This data illustrates that during the five year search period, a total of 14 personal injury accidents have been recorded within the search area. Ultimately the review identifies no evidence of accident or road safety issues relating either to operation of the existing Kronospan access or the use of the local highway network by HGVs. It is therefore concluded that there are no prevailing highway safety issues within the vicinity of the site that may call the proposed development into question.

Sustainable Transport Connections

- 7.2.8 It has been concluded that the proposal site represents a sustainable location for an employment development, being located within an acceptable walk/cycle catchment of local residential areas, as well as being accessible by both bus and rail services to/from key local settlements slightly further afield. These services are anticipated to reduce the need for employees at the site to utilise the car for commuting journeys.

7.3 **Existing Kronospan Site Operations**

- 7.3.1 The Kronospan manufacturing facility has been in operation since the early 1970s and primarily produces wood-based panels and other wood products. The primary products manufactured at the site are chipboard and medium density fibreboard (MDF), from this a number of secondary products are produced such as laminate flooring, worktops and melamine faced boards.
- 7.3.2 Details of the historical operation of the Kronospan site have been established through reference to vehicle and operational data provided by the site operator. Review of this information identifies that, in recent history, the site has typically generated c1,500-1,700 two-way vehicle movements per day, of which c700 have comprised HGV movements. It has also been identified, however, that the site has historically generated peak levels of HGV traffic of c460 loads per day, or over 900 two-way movements.

7.4 Description of the Development Proposals

- 7.4.1 The proposed development is for the construction and operation of an oriented strand board production facility at the existing Kronospan manufacturing plant. At present OSB is manufactured at European Kronospan sites and imported to the UK to meet customer needs. The Proposed Development would allow Kronospan to manufacture this product in the UK at the Chirk manufacturing facility, enhancing the sites capability and improving the long term sustainability of the business at the Chirk manufacturing site. The planning application for the OSB facility is one of four applications forming an ongoing development programme, the aim of all proposals being to deliver environmental improvements at the site and ensure the long term economic viability of the manufacturing facility.

Proposed Site Operations

- 7.4.2 The OSB production facility would be used to accommodate an OSB blending station, board press and forming line which would enable Kronospan to produce OSB at the manufacturing facility in Chirk. Raw materials would be delivered to the site via rail and HGV deliveries, whilst exports of product would be undertaken purely by HGV. The proposed OSB facility is proposed to be operated subject to the same operational hours of the existing Kronospan facility.

Employment Opportunities

- 7.4.3 It is anticipated that the proposed OSB facility would create 100 new employment opportunities at the site, albeit these would be offset by other proposed improvements at the Kronospan site which are likely to reduce staff numbers i.e. there would be no/limited net change in employment at the Kronospan facility as a consequence of the OSB facility proposals.

Changes in Traffic Levels Arising from Development

- 7.4.4 Given that the proposed development is unlikely to result in any net change in employment at the site, any changes in traffic at the Kronospan site are

likely to be limited to HGV traffic associated with the transportation of raw materials and finished product. Based on the forecast production levels, and including for cessation of the existing import/export of OSB product, it is envisaged that the OSB facility would give rise to an additional 91 HGV loads per day, or 182 two-way HGV movements, across the local and strategic highway networks.

Effects of Railhead on OSB Traffic Levels

- 7.4.5 The existing railhead is used for the importation of raw materials to the Kronospan facility, and has enabled the facility to significantly reduce the quantum of materials that are brought by road. With regard to the proposed OSB facility it is anticipated that the equivalent of 10,000 HGV loads per annum would be avoided from having to travel on the highway network, which represents the avoidance of approximately 39 HGV loads per day, or 78 two-way HGV movements.

Daily Profile of OSB Development Traffic

- 7.4.6 The daily profile of HGVs delivering raw materials to the OSB facility, and exporting the OSB product, is anticipated to reflect that of current Kronospan operational activity. Based on this assumption, just 11 additional two-way HGV movements are anticipated during the AM network peak hour (5 in / 6 out), falling to 8 movements during the PM peak period. This represents a maximum of 1 additional HGV movement every 6 minutes. During the busiest hour of HGV movements (14:00-15:00) just 15 two-way movements are anticipated (8 in / 7 out), representing 1 additional HGV movement every 4 minutes. Such increases in HGV levels are considered unlikely to have any notable effect on either the local or strategic highway network, either in operational or safety terms.

Distribution and Assignment of OSB Development Traffic

- 7.4.7 With regard to the distribution of OSB development traffic across the local and strategic highway network, it is envisaged that almost all would route

towards the A5/A48 roundabout, with a 50/50 distribution from that point between the route of the A483 to the north and the A5 to the south.

7.5 **Key Assessment Parameters**

Assessment Time Periods

- 7.5.1 The assessment of the traffic related effects of development has been undertaken for the observed AM and PM peak hour periods of 07:45-08:45 and 16:30-17:30 respectively, along with the core daytime 12 hour period of 07:00-19:00.

Future Year Traffic Growth Assumptions

- 7.5.2 It is anticipated that the development of the OSB facility could be completed and fully operational by 2018. Accordingly a 2018 opening year date has been utilised for core traffic demand assessments. In order to account for future network traffic conditions, an additional future design year of 2023 has been considered for all capacity related assessments. Background traffic data has been factored up to these future years on the basis of DfT NTM TEMPRO forecasts for the immediate Middle Layer Super Output area of Wrexham 019, which incorporates the settlement of Chirk and the surrounding areas, to create opening year and design year baseline flows against which the impact of development has been assessed.

Committed Development Traffic

- 7.5.3 During pre-application discussions, neither WCBC nor WG/NMWTRA has identified any specific committed developments which would need to be taken into account within this assessment. Axis has, however, been made aware of the recently approved Welsh Dragon development scheme, on land to the southeast of the A5/A483 Halton roundabout junction. Following review of the supporting Transport Assessment for the Welsh Dragon development, it has been concluded that its traffic related effects on the immediate local highway network would be limited. Accordingly it has not specifically been taken into account within this assessment.

- 7.5.4 Despite there being no specific committed developments considered within the assessment, TEMPPO growth factors for the assessments of future year development impact are included as noted above. Given that TEMPPO factors already include for both local housing and employment growth projections, the effects of any notable committed development schemes should be inherently accounted for within the application of general network growth.

7.6 **Assessment of Anticipated Development Traffic Impact**

- 7.6.1 This section of the report has considered the operation of the immediate highway network to the development site and the ability of this network to accommodate the predicted future development traffic flow conditions. Assessments have been carried out through the consideration of both link flow impact as well as junction operational assessments.

Comparison to Historical Operational Demand

- 7.6.2 The Kronospan site has historically operated at an increased level, generating HGV levels notably in excess of that currently experienced or compared to those anticipated under future operation of the proposed OSB facility. During 2006, the facility was recorded as generating c460 HGV loads per day, or in excess of 900 two-way HGV movements. It is anticipated that, should the proposed OSB facility be approved, total traffic levels would likely fall just below this historical level of operational HGV movements.

Link Flow Impact on Immediate Local Network

- 7.6.3 Review of the anticipated impact of the projected traffic flows arising from the proposed OSB facility has identified the proportional link impact of the proposals would be materially less than 5% across the highway network. Indeed, the proportional impact of development, even under a busy day of operations, would stand at or less than 1.5% of background traffic levels.

On this basis it is considered that the impact of the operation of the proposed OSB facility would be negligible.

Junction Operational Impact

7.6.4 Notwithstanding the results of the proportional link flow impact exercise, junction capacity modelling has been undertaken for the AM and PM peak hour future year periods (07:45-08:45 & 16:30-17:30) for the three junctions within the study area.

7.6.5 Assessments have considered both “Do Nothing” and “Do Something” scenarios, in order to provide a comparison against future year conditions without any OSB facility development. It has been concluded that the impact on junction capacity, of traffic associated with the proposed development scheme, would be negligible. Changes in junction RFC at all locations would be strictly limited, with minimal associated effects on queuing and delay.

7.7 **Conclusions**

7.7.1 Based on the review of anticipated future operational highway conditions and reference to appropriate guideline standards, it is concluded that the proposed OSB facility at the Kronospan site would have only a negligible impact on operational or highway safety conditions over the local highway network. Accordingly there should be no overriding reasons for refusal of the planning application on highway grounds.