

TRANSPORT ASSESSMENT

Maelor Foods

Proposed Expansion of Operations at Maelor Foods

Pickhill Lane, Cross Lanes, Wrexham, LL13 0UE

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Contents

1	INTRODUCTION.....	1
	Background	1
	Document Content	1
2	LOCAL HIGHWAY NETWORK & SITE SUSTAINABILITY.....	2
	Site Context.....	2
	Pickhill Lane	2
	A525	4
	Recorded Traffic Accidents	5
	Accessibility on Foot	6
	Accessibility by Cycle	7
	Accessibility by Bus	8
	Accessibility by Rail.....	9
3	EXISTING SITE OPERATIONS	10
	Existing Processing Operations.....	10
	Staff	10
	Production	11
	Wider Distribution of Production Vehicles	12
4	PROPOSED SITE OPERATIONS.....	13
	Development Scale	13
	Infrastructure Improvements.....	13
	Proposed Site Operations: Staff.....	14
	Proposed Site Operations: Production Movements	15
	Sensitivity Test – Introducing HGV Operations on Sundays.....	18
	Servicing Management Plan	19
	Timescales.....	19
5	POTENTIAL TRAFFIC IMPACT.....	20
	A525 / Pickhill Lane Junction.....	20
	Pickhill Lane Impact	23

6	TRAVEL PLAN STRATEGY UPDATE	25
	Travel Plan Implementation.....	25
	Travel Plan Objectives	25
	Travel Plan Measures	25
	Travel Plan Targets & Review	26
7	SUMMARY & CONCLUSIONS	27

Appendices

Appendix A – Staff Travel Survey Results

Appendix B – Traffic Count Data

Appendix C – Traffic Diagrams

Appendix D – Proposed Alternative A525 / Pickhill Lane Junction Design

Appendix E – Maelor Foods Travel Plan

1 INTRODUCTION

Background

- 1.1 Vectos have been appointed by Maelor Foods to provide highways and transport advice in support of development proposals to expand existing poultry processing capabilities at the Maelor Foods site off Pickhill Lane, Wrexham, LL13 0UE.
- 1.2 In March 2015, the site received planning permission (Ref: P/2014/0781) from Wrexham County Borough Council (WCBC) for the change of use from a cheese cutting and packing facility to a poultry processing facility. One of the planning conditions (No. 14 in the Decision Notice) associated with the planning permission stated that no more than 400,000 birds shall be processed each week at the site. This was in the interests of highway safety at the A525/Pickhill Lane junction, and amenity along Pickhill Lane.
- 1.3 Permission was granted in 2019 (via appeal) for the increase in production from 400,000 birds per week to 1 million birds per week, with no heavy goods vehicle movements on Sundays, in the interests of amenity on Pickhill Lane. Since planning permission was granted, improvements have been made to the site access on Pickhill Lane as well as the A525/Pickhill Lane junction to improve safety. The historic operations associated with the adjacent transport logistics depot (Lloyd Fraser) have also ceased.
- 1.4 In response to continued growing market demand in the UK, the current condition limiting the number of birds that can be processed on-site is limiting the potential for Maelor Foods to respond to changes in the market. As such, the latest proposals seek to further increase production at the Maelor Foods site to 2 million birds per week, with the prospect of 125 additional jobs. In the interests of highway safety, a further improvement to the A525/Pickhill Lane junction is proposed.

Document Content

- 1.5 The scope of this TA is as follows:
 - Local Highway Network and Site Sustainability;
 - Existing Site Operations;
 - Proposed Site Operations;
 - Potential Traffic Impact;
 - Travel Plan Strategy;
 - Conclusions.

2 LOCAL HIGHWAY NETWORK & SITE SUSTAINABILITY

Site Context

- 2.1 The site is accessed from Pickhill Lane via the A525 in the west. Pickhill Lane is a rural road and the A525 is a key link into Wrexham whilst also providing access to the wider network and local settlements including Cross Lanes, Porthwgan, Bangor-on-Dee, Marchwiel and Coedpoeth. It is characterised as a largely rural route with limited frontage activity. The site is bound on all sides by agricultural land, with five residential dwellings in the vicinity of the site access on the western side of Pickhill Lane.

Pickhill Lane

- 2.2 Pickhill Lane has a two-way working single carriageway arrangement, with a width between 5.9m – 6.3m. There are no junctions with other roads between the development site and the A525 to the southwest.
- 2.3 Travelling northeast past the site, Pickhill Lane reaches a minor intersection that provides access to a farm premise before forming a loop route back towards the A525. At the point of intersection, Pickhill Lane makes a sharp bend north before continuing and reaching the junction with Talwrn Lane / Shaw Road. At this point Pickhill Lane transitions to Talwrn Lane where it narrows to less than 3.0m in width. Talwrn Lane then continues in a north-westerly direction where it meets the B5130 at a priority junction.
- 2.4 Pickhill Lane is subject to the national speed limit (60mph). However, due to the rural nature of Pickhill Lane, traffic speeds are much lower; with average speeds of 28mph and 27mph in the eastbound and westbound direction, respectively. The 85th percentile were recorded as being 37.5mph and 38mph in the eastbound and westbound direction (*speed data obtained from ATC data - May 2022*).
- 2.5 An Automatic Traffic Counter (ATC) survey recorded existing traffic flows on Pickhill Lane between Monday 23rd May and Sunday 29th May. A summary of the survey results is presented in **Figure 2.1** and **Figure 2.2**. The total flows for each hour on Pickhill Lane are broadly comparable with flows previously recorded in 2017.

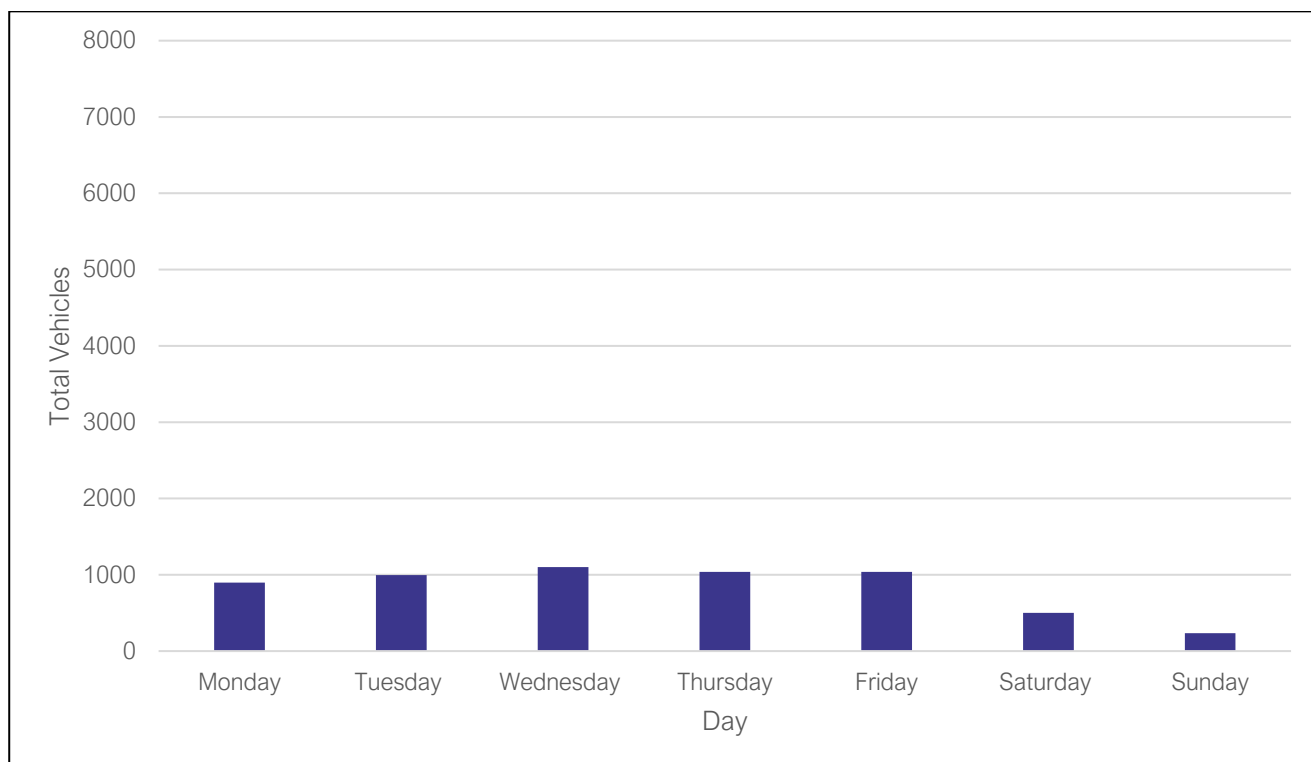


Figure 2.1 – Total Vehicle Flow Movements w/c 23rd May 2022 (Pickhill Lane)

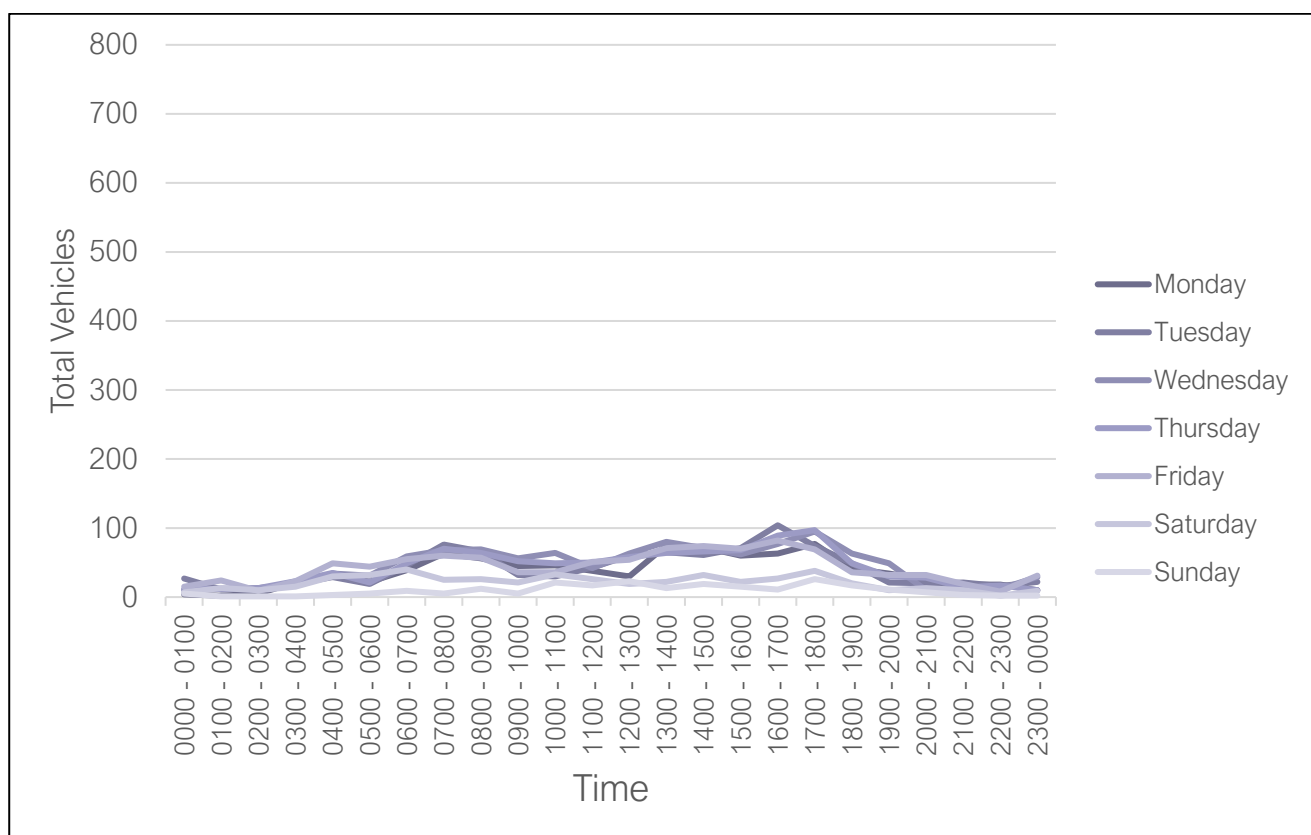


Figure 2.2 – Daily Profile of All Vehicles w/c 23rd May 2022 (Pickhill Lane)

2.6 As is shown, the maximum number of vehicles observed within a single hour was 104, which equates to less than 2 vehicles every minute. Total flows are considered to be low.

- 2.7 Interrogating the data further, 179 HGV movements were observed on Pickhill Lane during the busiest day (Wednesday), with the maximum number of HGV vehicles observed within a single hour being 20. In addition, 69 HGV movements were observed on a Saturday. These numbers include all large vehicle classifications, including medium two-axle trucks/vans.

A525

- 2.8 As discussed, the A525 is a key link into Wrexham whilst also providing access to the wider network and local settlements. In the vicinity of Pickhill Lane the A525 is circa 7.3m in width and subject to a 40mph speed limit. Slow markings are present as there is a slight bend in the road alignment. A footway is present on the eastern side of the A525, that provides direct access to the local bus stops.
- 2.9 An Automatic Traffic Counter (ATC) survey recorded existing traffic flows on the A525 between Monday 23rd May and Sunday 29th May. The survey was located south of the junction with Pickhill Lane within the 60mph limit. Daily and hourly total two-way flows observed are presented in **Figure 2.3** and **Figure 2.4**.

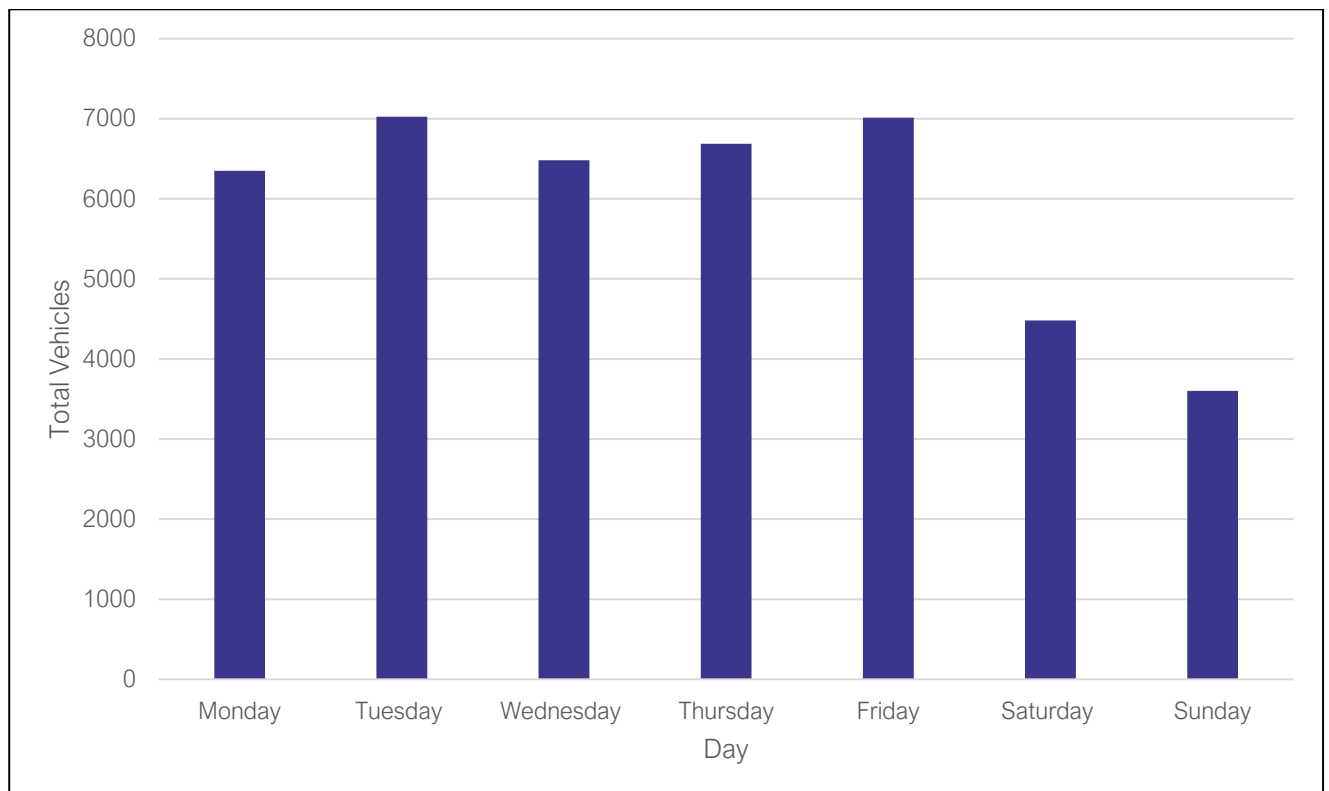


Figure 2.3 – Total Vehicle Flow Movements w/c 23rd May 2022 (A525)

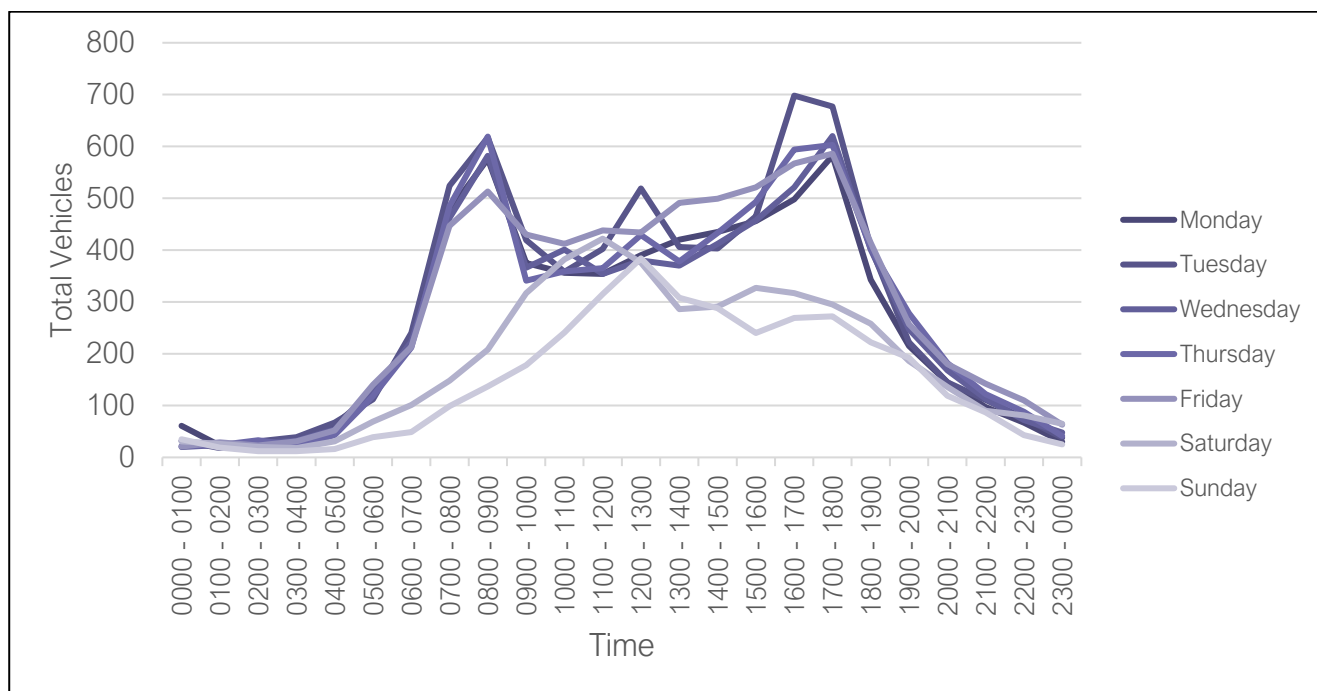


Figure 2.4– Daily Profile of all Vehicles w/c 23rd May 2022 (A525)

- 2.10 The data has been further interrogated to examine existing traffic flows on the A525 during peak and interpeak hours, including the proportion of HGVs during these times – refer to **Table 2.1**.

A525 Two-way Traffic Flows	Weekday Average	Weekend Average
AM Peak	581 (4% HGV)	369 (3% HGV)
PM Peak	614 (3% HGV)	380 (3% HGV)
Interpeak	435 (7% HGV)	-

*Weekday: AM Peak = 0800 – 0900; PM Peak = 1700 – 1800

Weekend: AM Peak = 1100 – 1200; PM Peak = 1200 – 1300

Interpeak: Average Hourly between 0900 - 1700

Table 2.1 – A525 Two-way Traffic Flows (Peak & Interpeak Periods)

- 2.11 As is shown in terms of vehicle composition, the majority of traffic movements are cars and light vehicles. The majority of HGV movements are focussed during the weekday inter-peak period, but these are still relatively low.

Recorded Traffic Accidents

- 2.12 A review of the accident history on the local highway network has been conducted with data for the most recent five-year period presented as **Figure 2.5**.

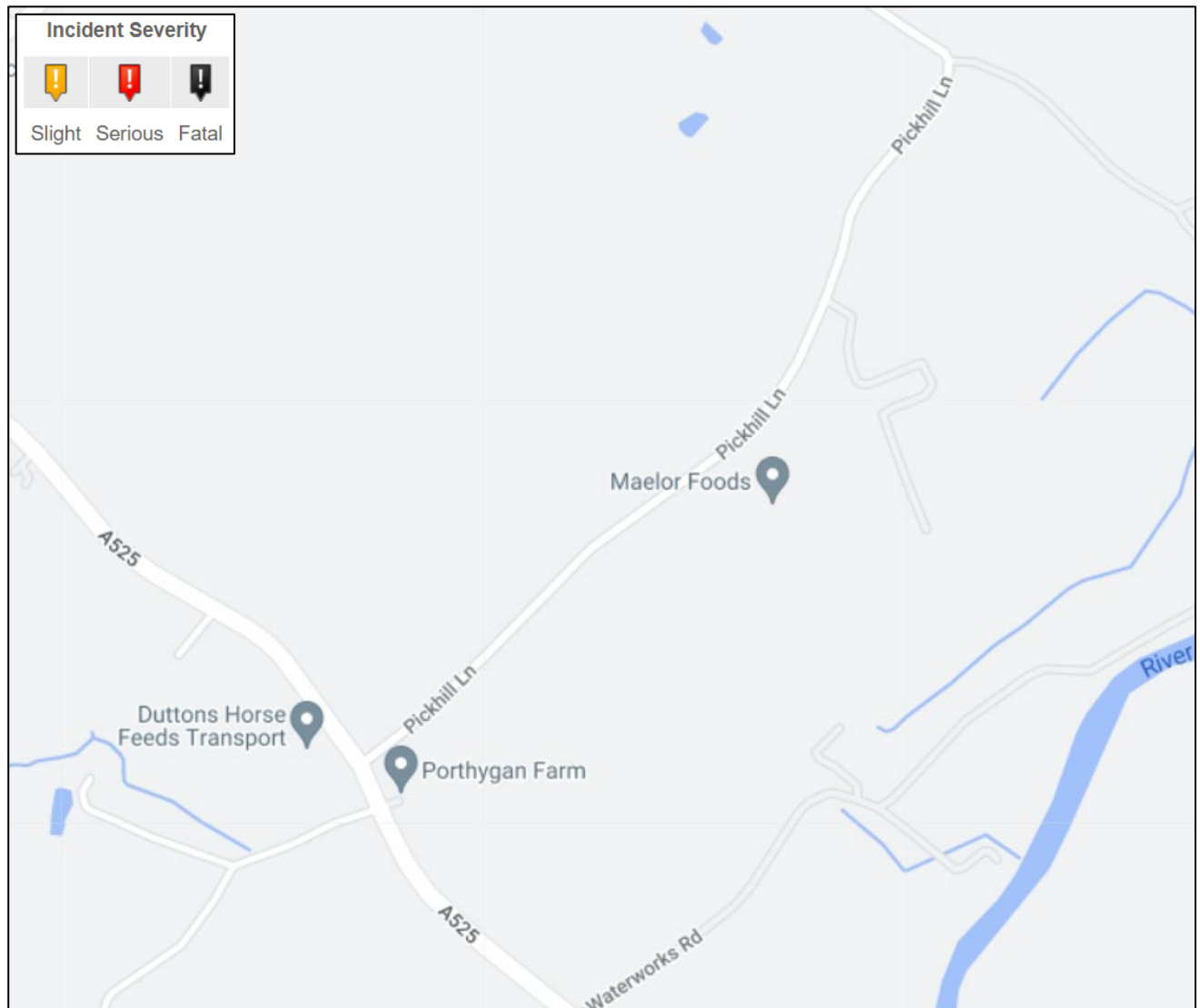


Figure 2.5 – Local Accident Data (Source: Crashmap)

- 2.13 The data highlights that there have been no recorded accidents on Pickhill Lane or at the junction with the A525 in the most recent five-year period.

Accessibility on Foot

- 2.14 The Chartered Institution of Highways and Transportation document 'Providing for Journeys on Foot' (2000) provides guidance on what are considered to be acceptable walking distances. It states that acceptable walking distances for pedestrians without mobility impairment are up to 1km with 2km being the preferred maximum.
- 2.15 The site is located 1.3km south-east of a settlement adjacent to Cross Lanes and 1.7km north of the larger settlement of Bangor-on-Dee. The pedestrian catchment for 2km is shown in **Figure 2.6** below which illustrates the areas that can be reached.

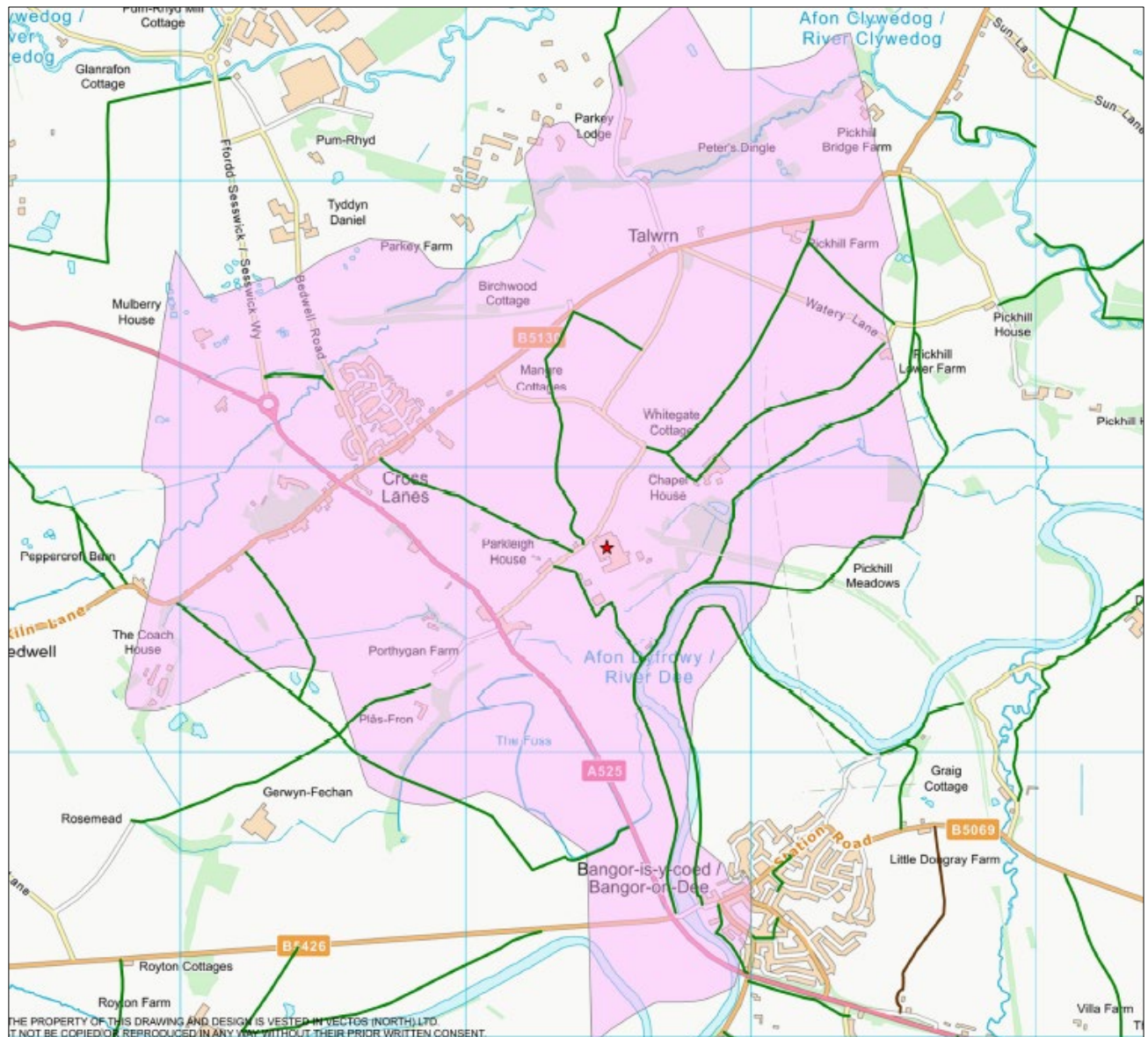


Figure 2.6 – 2km Pedestrian Catchment

- 2.16 Based on the above, the site is situated within walking distance from the residential areas of Bedwell Crescent, Hunters Meadow and Meadowcroft within Cross Lanes. Overton Road, High Street and Whitchurch Road in Bangor Is-Y-Coed are located within the 2km walking distance of the site.
- 2.17 To facilitate connectivity, a footpath is provided along the southern side of Pickhill Lane which provides a link to the footpath which runs along the eastern side of the A525. Such provision can be used when walking to the site from the aforementioned local / nearby settlements.

Accessibility by Cycle

- 2.18 Cycling is increasingly being recognised as a viable alternative to the car and there has been sustained growth in cycling as both a mode of travel and leisure activity. The DfT Local Transport Note 1/20 Cycling Infrastructure Design states that, 'two out of every three personal trips are less than five miles in length – an achievable distance to cycle for most people'.

- 2.19 Cycling has the potential to replace short car journeys, particularly those under 5 kilometres. Using a speed of 10mph (16kph) a catchment of 5km would be available within approximately 20 minutes cycle time. With this in mind, **Figure 2.7** shows the 5km cycle catchment from the site.

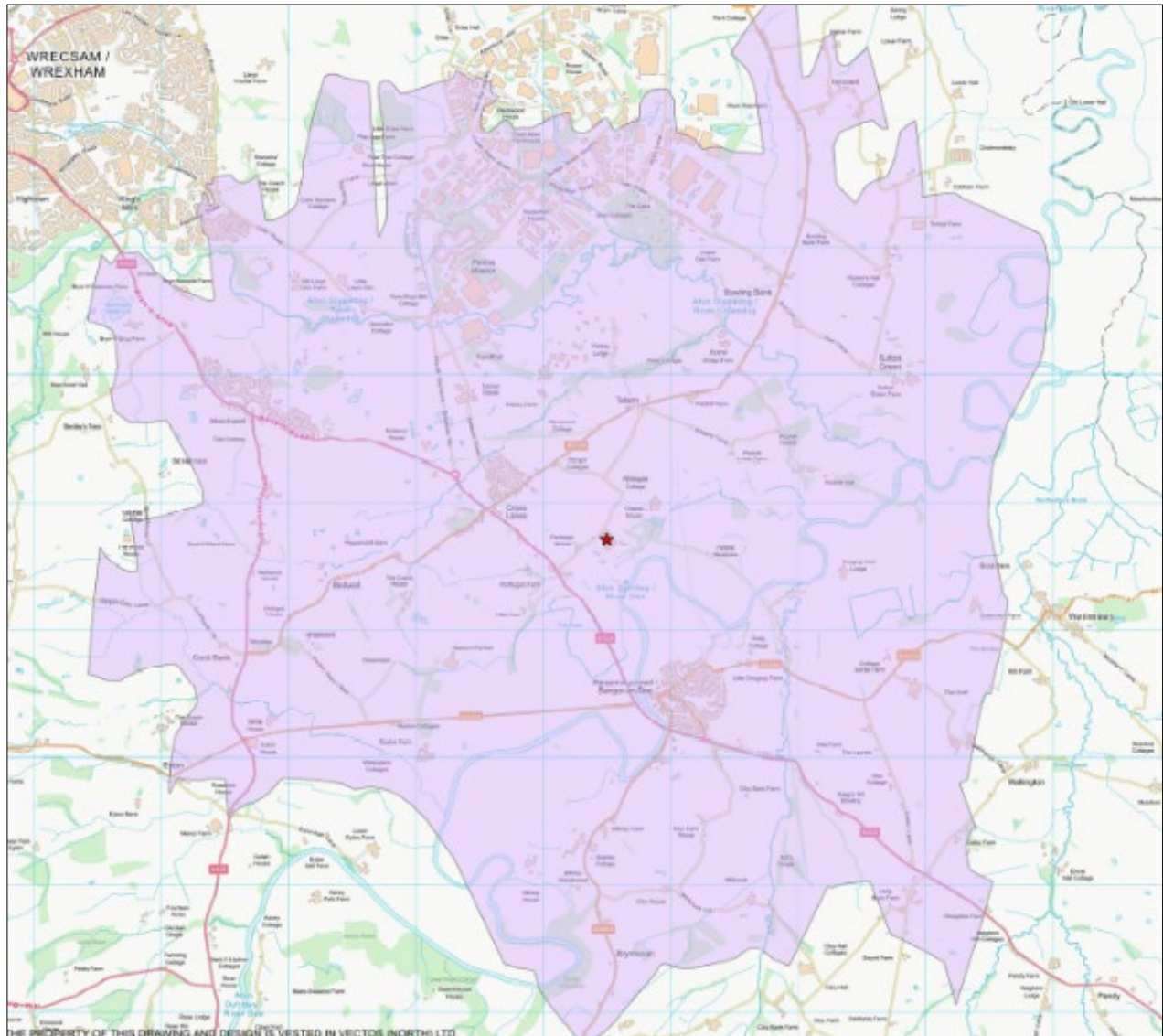


Figure 2.7 – 5km Cycling Catchment

- 2.20 As can be seen, the 5km catchment encompasses Cross Lanes, Bangor Is-Y-Coed, Marchwiell, Pentre Maelor and the eastern outskirts of Wrexham, such as Abenbury Road. This catchment indicates that cycling could be seen as a viable form of commutable transport for those working on site and living in the surrounding residential areas.

Accessibility by Bus

- 2.21 Bus route 146 services the A525 providing a link between Wrexham and Whitchurch. The nearest bus stop to the site is located at Cross Lanes, approximately 1km walking/cycling distance from the site, and consists of a shelter and perch seating. Shown in **Table 2.2** is the frequency of the 146-bus service.

Route No.	Route	Frequency per hour (Mon – Fri)				Sat	Sun
		AM Peak	Midday	PM Peak	Evening		
146 (& X46)	Wrexham to Whitchurch via Cross Lanes	1	1	1	0	1	0

Table 2.2 – Local Bus Timetable Summary

2.22 The local bus services may be suitable for use by some daytime shift workers at the site.

Accessibility by Rail

2.23 Wrexham railway station is located approximately 6.75km to the northwest of the site and is served via the bus route 146. The station is operated by Transport for Wales and provides a ticket office, ticket machines and a 68-space car park.

2.24 The station provides direct access to destinations such as Chester, Shrewsbury, Hereford, Wolverhampton, Birmingham New Street, Newport and Cardiff Central at regular intervals throughout the day. There are also regular services from Wrexham to Liverpool and Manchester.

2.25 Transport for Wales allow bicycles on trains where space is available. The station also provides 10 cycle hoops at the front of the station providing parking space for 20 bicycles. This offers the opportunity for some staff to possibly use the train as part of a linked journey.

3 EXISTING SITE OPERATIONS

Existing Processing Operations

- 3.1 The site is currently restricted to process no more than 1 million birds per week, with no HGV movements on Sundays. At the time of preparing this report, up-to-date information has been provided by Maelor Foods regarding weekly processing numbers – refer to **Table 3.1** below.

Week	Weekly Processing Numbers
W.C 16 th May 2022	742,778
W.C 23 rd May 2022	974,715
W.C 30 th May 2022	957,007
W.C 6 th June 2022	971,216

Table 3.1 – Weekly Processing Numbers May / June 2022 (Source: Maelor Foods)

- 3.2 As is shown, weekly processing numbers are currently approaching 1 million birds per week.

Staff

- 3.3 There are 253 staff employed at the Maelor Foods site, with 92% employed on a full-time basis. Not all staff are present on site at the same time with employees working a range of shift patterns, with start and end times staggered throughout the day depending on what shift variation they are working. The primary shift start / end times avoid network peak hours.
- 3.4 A staff travel survey has been undertaken (2021) as part of the Maelor Foods Travel Plan which asked existing employees about their travel to work travel habits. At the time the survey was undertaken 100 staff members responded to the survey. **Table 3.2** shows current employees' mode of travel to work with further details presented in **Appendix A**.

Travel Mode	Share % and Number of Employees	Extrapolated for Total Existing Staff Members
Car (driver single occupancy)	49% (49)	124
Car (driver with passenger(s))	24% (24)	61
Car (as passenger)	16% (16)	40
Motorbike	3% (3)	8
Walk	1% (1)	3
Cycle	4% (4)	10
Taxi	2% (2)	5
Not Specified	1% (1)	3
Total	100% (100 respondents)	253 Existing Staff

Table 3.2 – Existing Employee Travel Modes (Source: 2021 Staff Travel Survey)

- 3.5 As is shown in **Table 3.2**, 76% of employees travel to the site via car/motorbike and park on-site. A further 2% arrive and depart via taxi.
- 3.6 Parking provision is sufficient for the existing development demands, with spare capacity still available.

Production

- 3.7 As part of Maelor Foods monitoring procedures, daily HGV movements are recorded. In addition, and to assist in understanding the variation in daily HGV movements, external traffic surveys have been used to supplement the data collected by Maelor Foods.
- 3.8 During the week commencing 23rd May (a normal operational week) a total of 588 HGV movements were recorded by Maelor Foods to and from the site over the 6-day working period, an average of 98 movements per day. A summary of the existing profile of HGV movements associated with current site operations is presented in **Figure 3.1**.

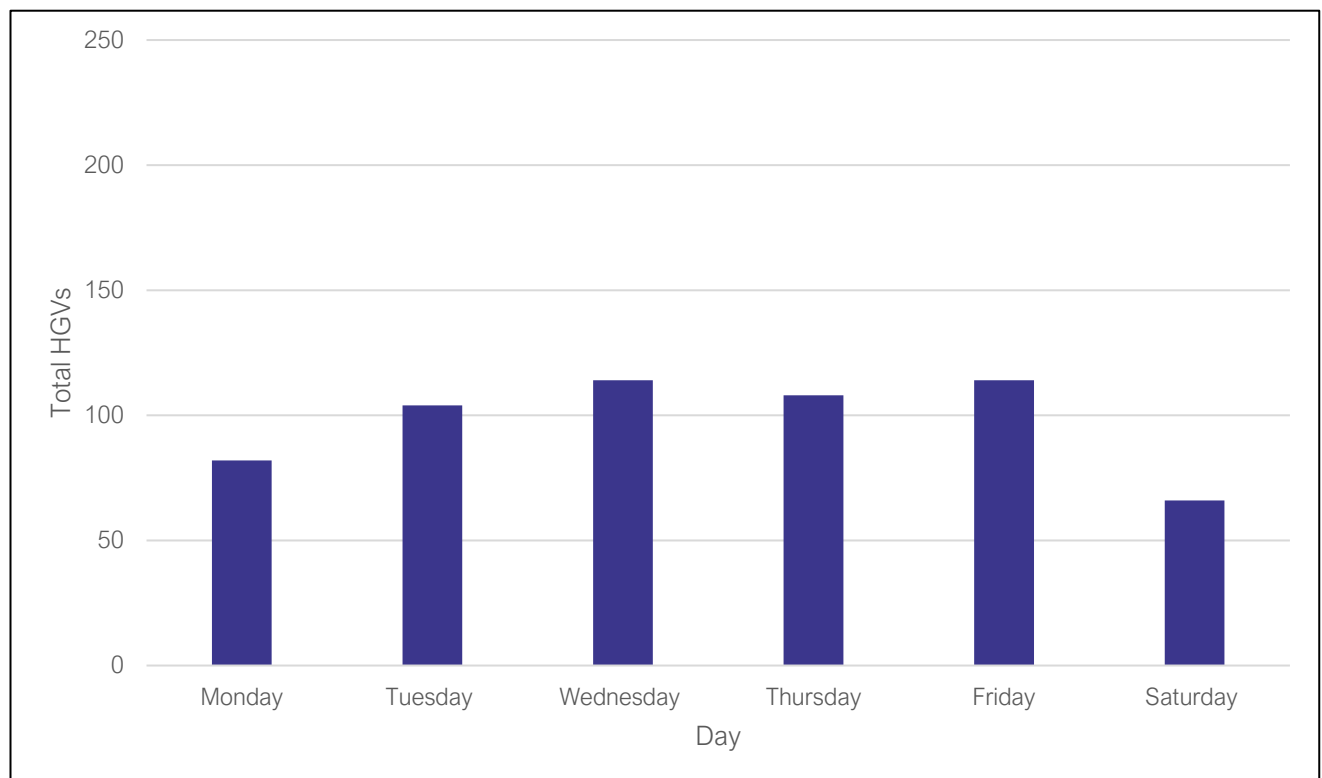


Figure 3.1 – Total HGV Movements w/c 23rd May 2022 (Source: Maelor Foods)

- 3.9 Hourly HGV movements have been derived from the surveyed hourly counts undertaken on Pickhill Lane. A summary of this hourly profile applied to the HGV movements recorded by Maelor Foods is presented in **Figure 3.2**.

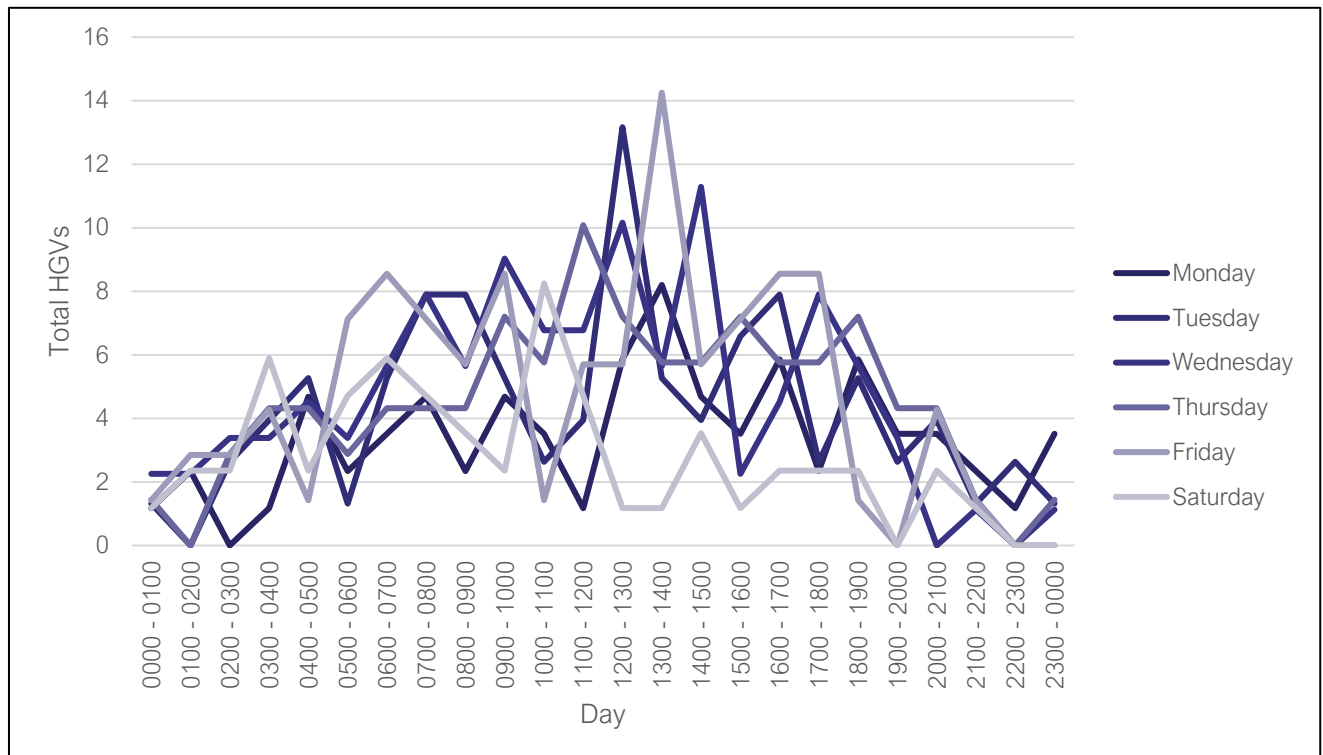


Figure 3.2 – Daily Profile of Maelor Foods HGV Movements w/c May 2022

- 3.10 The data highlights that the maximum hourly HGV movements occur between 0900-1500; during inter-peak periods. The maximum number of HGV movements in any single hour is 14 (approximately one movement every 4 minutes), which only occurred once during the whole working week. During night-time hours (22:00 – 06:00) HGV movements are much lower compared to the daylight period, with an average of 2-3 movements an hour.
- 3.11 As is shown, not all HGV movements on Pickhill Lane are associated with Maelor Foods site operations. As discussed, on the busiest day (Wednesday) HGV movements on Pickhill Lane were 179; therefore, applying **Figure 3.1**, around 65 HGV movements on Pickhill Lane will have been movements associated with other unrelated operations.

Wider Distribution of Production Vehicles

- 3.12 A turning count survey of the Pickhill Lane / A525 priority junction has been undertaken to further understand current site operations and HGV movements in relation to supply chain operations. **Appendix B** at the rear of this report includes the full traffic count data obtained.
- 3.13 As shown in **Figures 1 and 2 of Appendix C** (Traffic Diagrams), during the AM and PM peak hours the majority of HGVs exit Pickhill Lane and turn left to proceed onto the A525 (southbound), but entry movements onto Pickhill Lane are more evenly distributed from both the north and the south. This distribution could be assumed to be similar across the whole day.

4 PROPOSED SITE OPERATIONS

Development Scale

- 4.1 In order to provide additional flexibility to the operation of the site, Maelor Foods are seeking to further increase production to 2 million birds per week, with the prospect of 125 additional jobs.
- 4.2 Use would be made of existing access points to the site which were previously subject to improvement. No changes are proposed externally to the existing buildings, service yard or car parking, which have ample spare capacity to accommodate the proposed increase in operations.

Infrastructure Improvements

- 4.3 As part of the latest proposals, a commitment is being made by Maelor Foods to improve the A525/Pickhill Lane junction. A preliminary design is presented in **Appendix D**.
- 4.4 The proposals seek to realign the Pickhill Lane approach to the A525 to facilitate the movement of vehicles, particularly large vehicles. The kerb radii will also be increased to 16.0m. Visibility splays of 120m are achievable in either direction referencing the signed speed limit, which represents an increase in the visibility to the south compared to the existing junction.
- 4.5 As a result of the proposed improvement, large vehicles exiting Pickhill Lane, turning left and heading south along the A525 will no longer be required to cross the centreline of the carriageway, as presented in **Figure 4.1**. Whilst this has not historically resulted in any accidents, the proposals remove this specific risk from the highway network at this location.

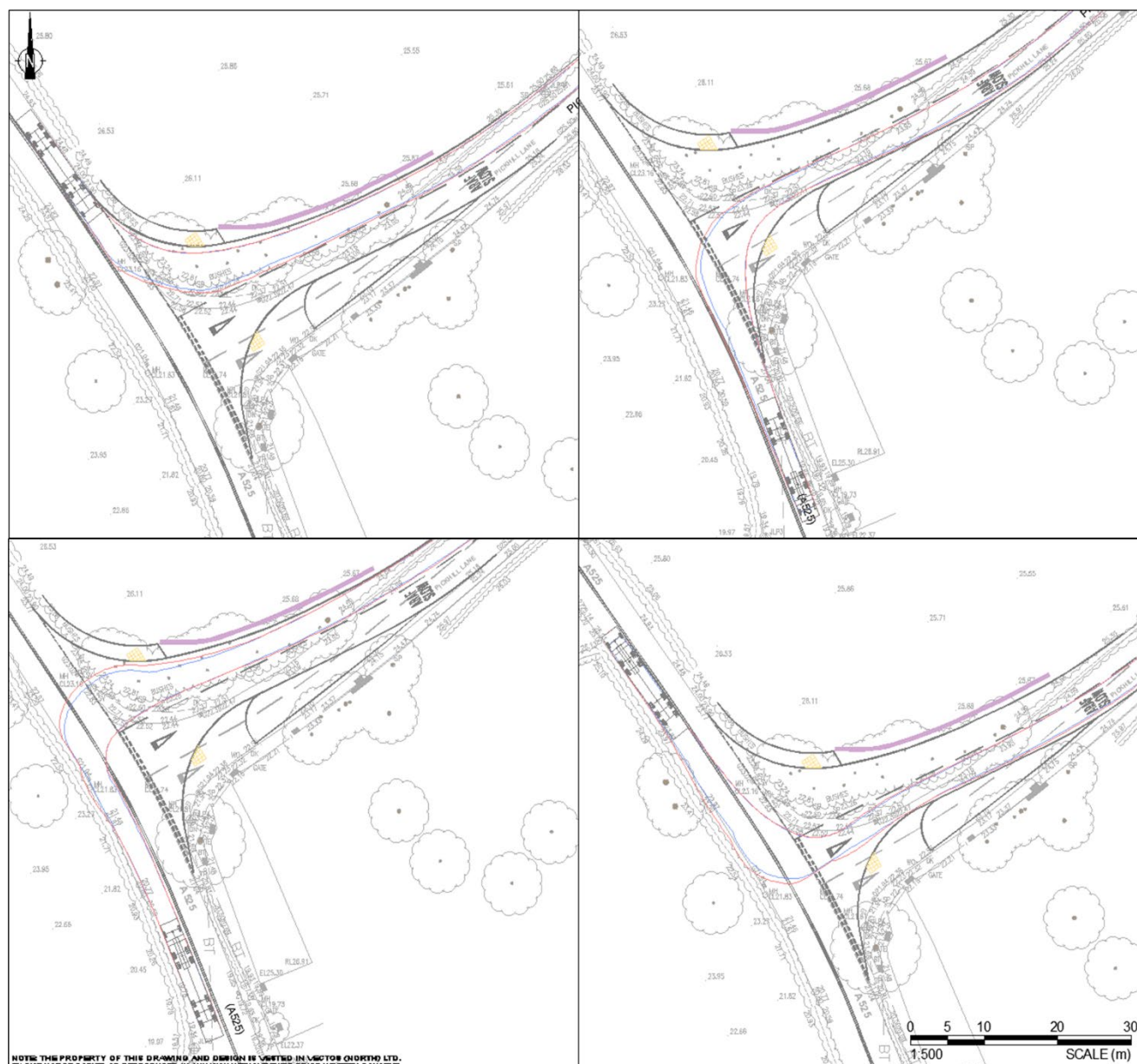


Figure 4.1: Indicative Articulated HGV Tracking

- 4.6 It should be noted that as part of the proposals, all existing access points to adjacent properties will be retained.

Proposed Site Operations: Staff

- 4.7 Existing staff travel mode information that was presented in **Table 3.2** has been applied to the prospect of 125 additional jobs / staff members. The existing travel mode split has been applied to give anticipated staff numbers by travel mode.

Travel Mode	Share (%)	Proposed Additional Staff by Travel Mode
Car (driver single occupancy)	49%	61
Car (driver with passenger(s))	24%	30
Car (as passenger)	16%	20
Motorbike	3%	4
Walk	1%	1
Cycle	4%	5
Taxi	2%	3
Not Specified	1%	1
TOTAL	100%	125 Additional Staff Members

Table 4.1 – Proposed employees by Travel Mode

- 4.8 As is shown in **Table 4.1**, it is expected that 98 new staff members will arrive in a vehicle (91 via car, 4 via motorbike and 3 via taxi). A total of 95 staff members will park on-site at some point during the day. Staff will continue to work varying shift patterns with staggered start and finish times.
- 4.9 The anticipated increase in staff members requiring a car or motorcycle space could be accommodated within the main site car park, bearing in mind that not all will be present on site at the same time. In the unlikely case that more parking spaces are required (i.e. at shift changeover), the parking area could be easily extended on site for a short duration.

Proposed Site Operations: Production Movements

HGVs

- 4.10 Vehicle movements associated with existing production have been factored to give a current maximum permitted and a future operational figure. These factors have been calculated based on the current operation of 974,715 birds and the current maximum and proposed operations (1 and 2 million birds respectively, with the factors applied being x1.026 and x2.052). These factors have then been applied to existing production vehicle movements to anticipate the increase in vehicles if production reaches 1 and 2 million birds.
- 4.11 **Table 4.2** shows the expected number of average weekly and daily two-way HGV trips to/from site for the different levels of operation.

Operations	HGV Two-Way Weekly Vehicles (Average)	HGV Two-Way Daily Vehicles (Average)
Current surveyed operation – 974,715 birds weekly	588	98
Permitted Operation – 1,000,000 birds weekly	603 (+15)	101 (+3)
Potential Future Operation – 2,000,000 birds weekly	1206 (+603 vs consented)	201 (+100 vs consented)

Table 4.2 – Potential Two-way HGV Vehicle Movements (Average Weekly and Daily Numbers)

4.12 The aforementioned x2.052 factor has been applied to give an indicative weekly and daily profile of total HGV movements based on 2 million birds. This data is presented in **Figure 4.2** and **Figure 4.3**.

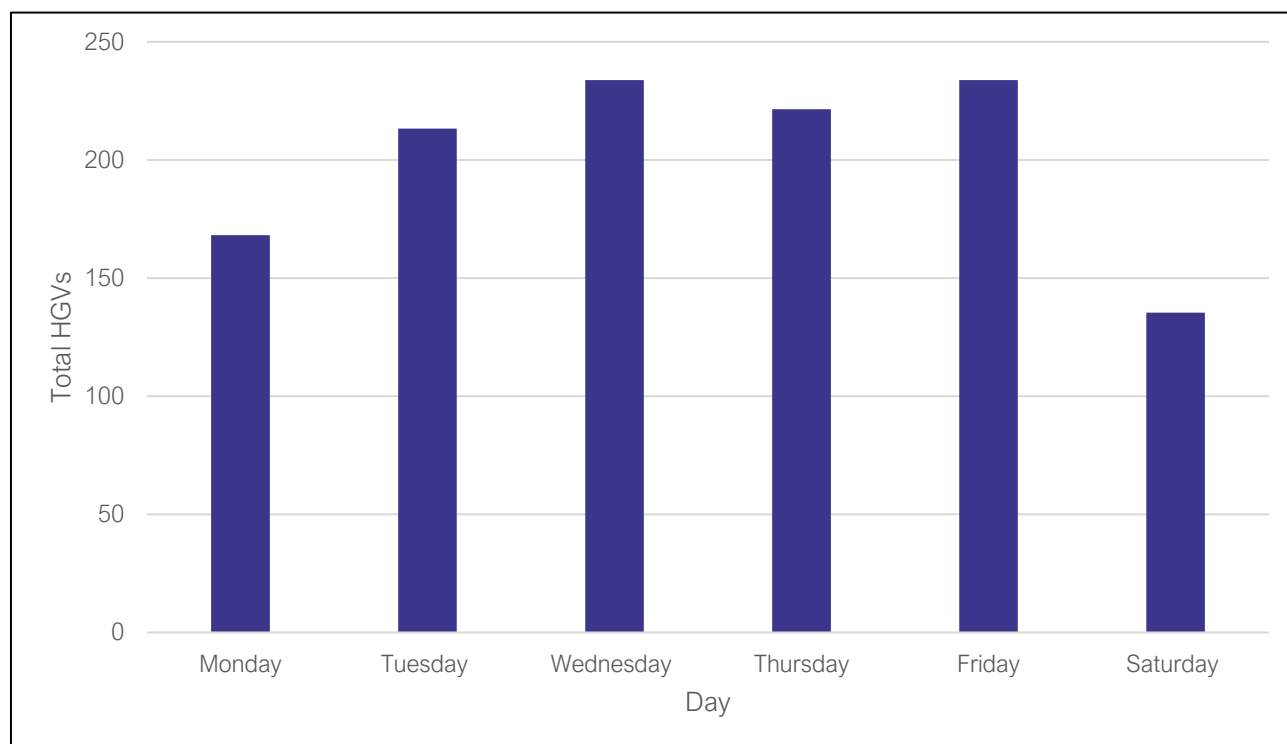


Figure 4.2 - Total Projected HGV Movements (2 million birds weekly)

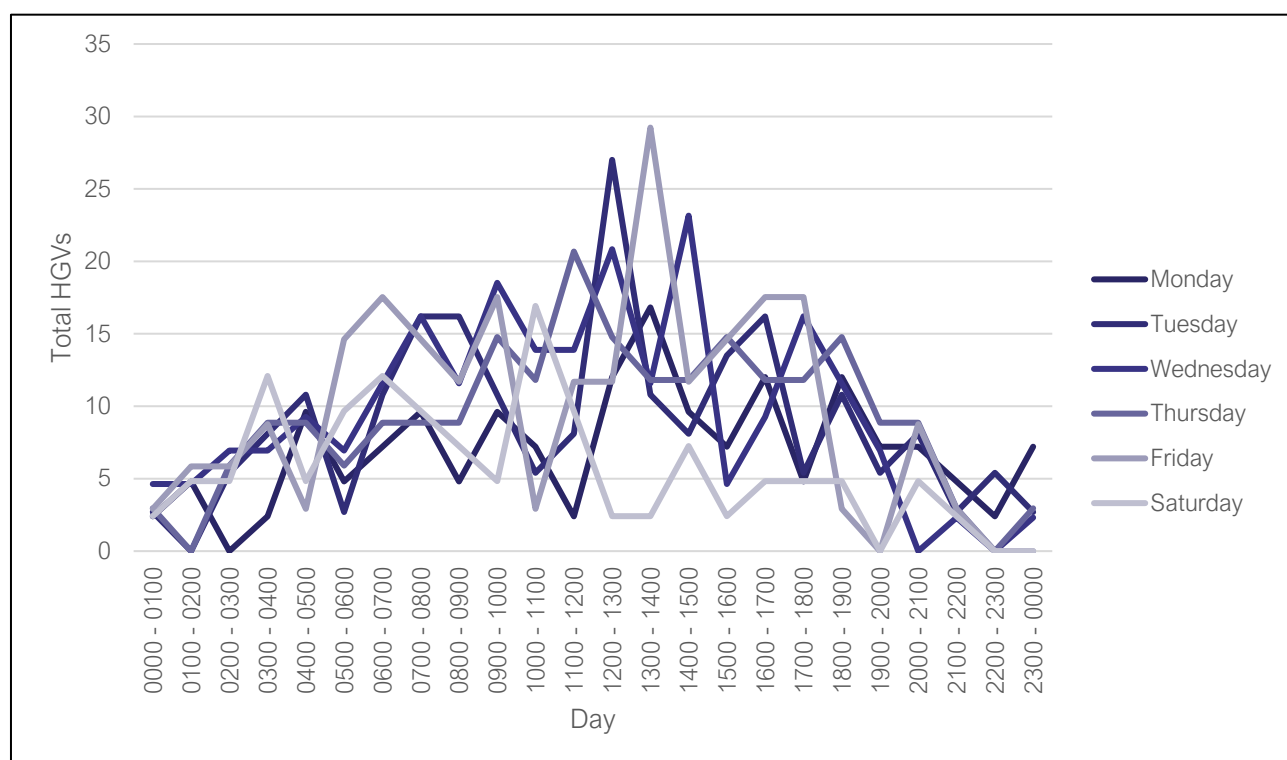


Figure 4.3 - Daily Projected Profile of HGV Movements (2 million birds weekly)

- 4.13 The traffic data projections suggest that the maximum hourly HGV movements would continue to occur between 09:00-15:00; during interpeak periods. The maximum number of total HGV movements in any single hour would be 29 (worst-case), during the interpeak period. During night-time hours (22:00 – 06:00) HGV movements will be much lower compared to the daylight period, with an average of 4-6 movements an hour.

HGVs – Net Increase

- 4.14 It must be noted that **Figure 4.2** and **Figure 4.3** include all existing HGV movements that are currently associated with the site and the processing of 1 million birds. These existing HGV movements have been netted off to calculate the projected increase that will occur as a result of the proposals – refer to **Figure 4.4** and **Figure 4.5**.

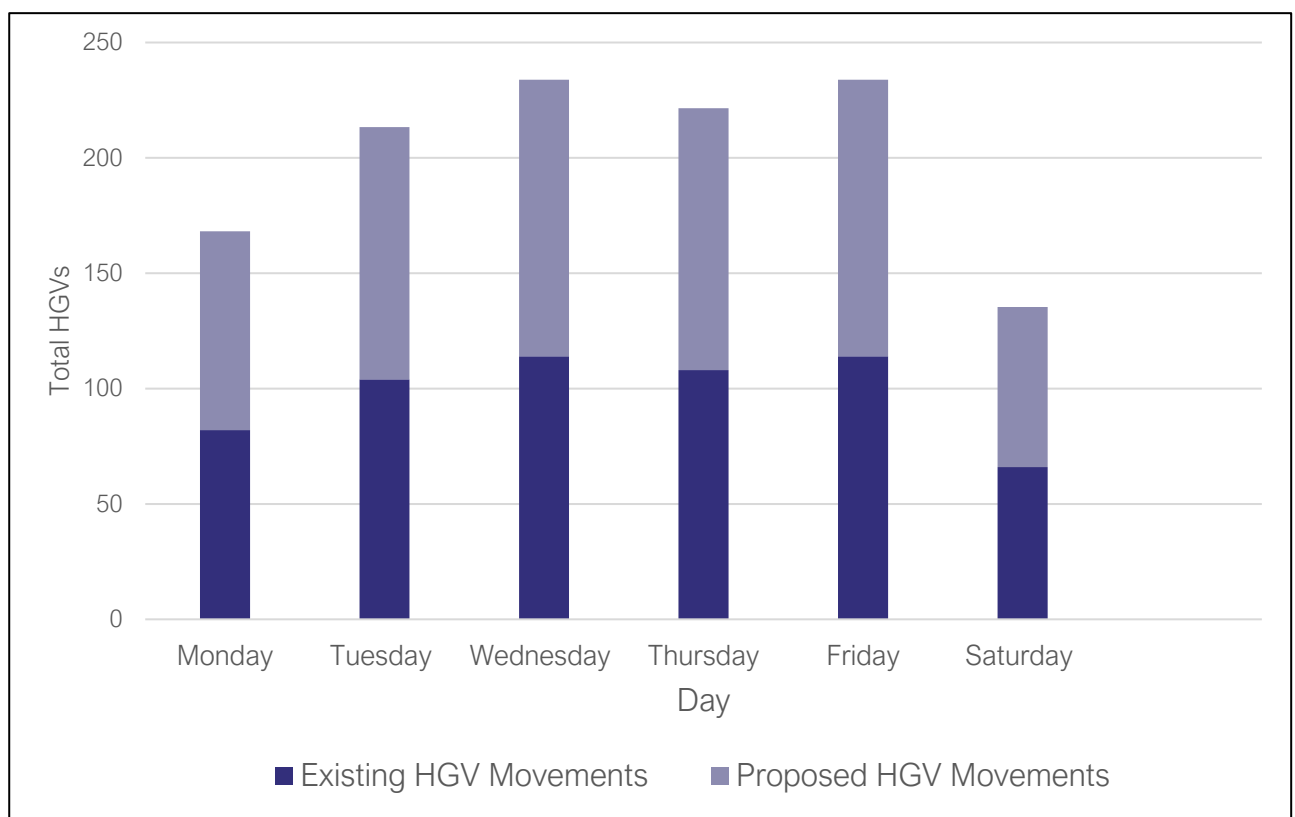


Figure 4.4 – Total Net Increase in HGVs Due to Proposals

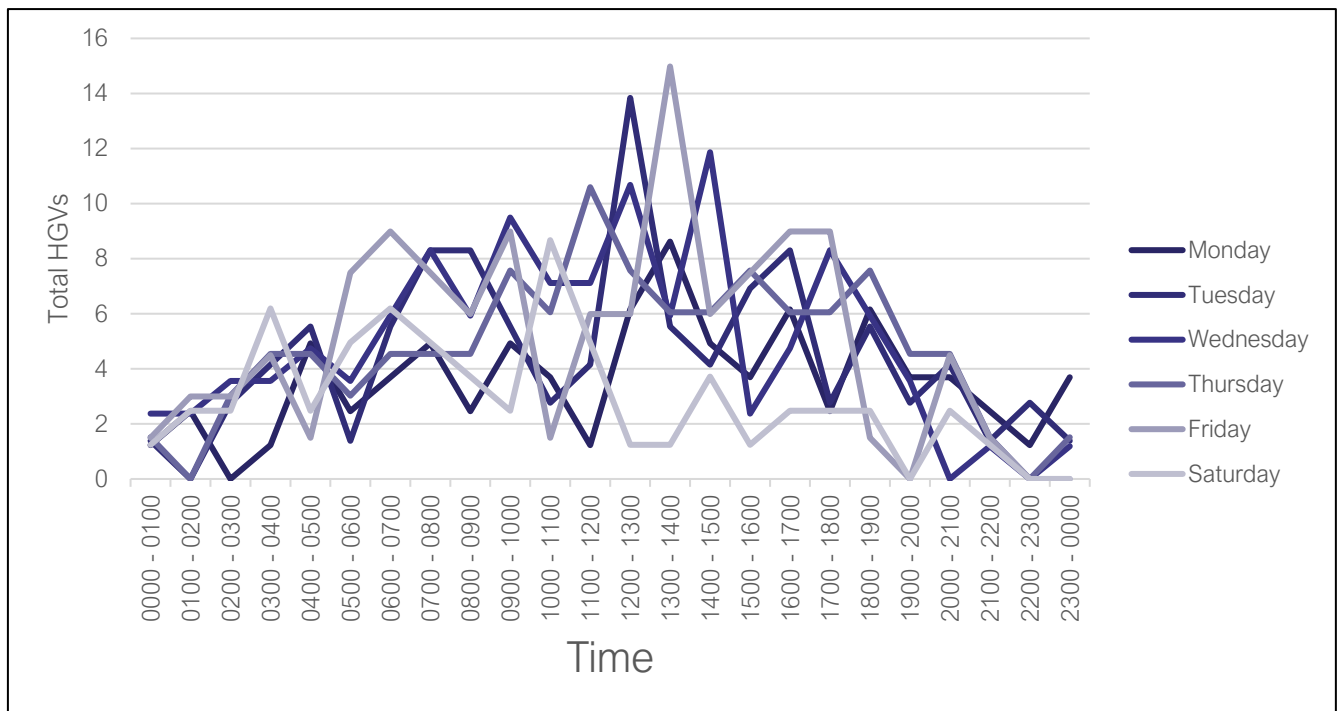


Figure 4.5 – Daily Projected Net Increase in HGVs Due to Proposals

- 4.15 Daily movements in HGVs would increase by no more than 15 vehicles in the peak / busiest hour (13:00 – 14:00), which is only an additional one vehicle every four minutes (worst-case). It must be recognised that this figure is a maximum and does not occur most of the time.
- 4.16 During the majority of daytime hours, the change in HGV movements will be less than 9 additional movements per hour. This equates to an average of one extra vehicle every seven minutes. Movements in the most sensitive peak periods will be limited.

Sensitivity Test – Introducing HGV Operations on Sundays

- 4.17 As discussed, there is currently a condition in place that restricts HGV movements on Sundays. A sensitivity test has been undertaken to understand the daily impact of HGV movements if movements were spread over a 7-day working week, as opposed to a 6-day working week.
- 4.18 As is presented in **Figure 4.6** below, if around 100 two-way HGV movements were permitted on Sundays, Monday to Saturday daily HGV movements would decrease relatively and on the busiest day(s) (Wednesday and Friday) there would be 19 fewer HGV movements.

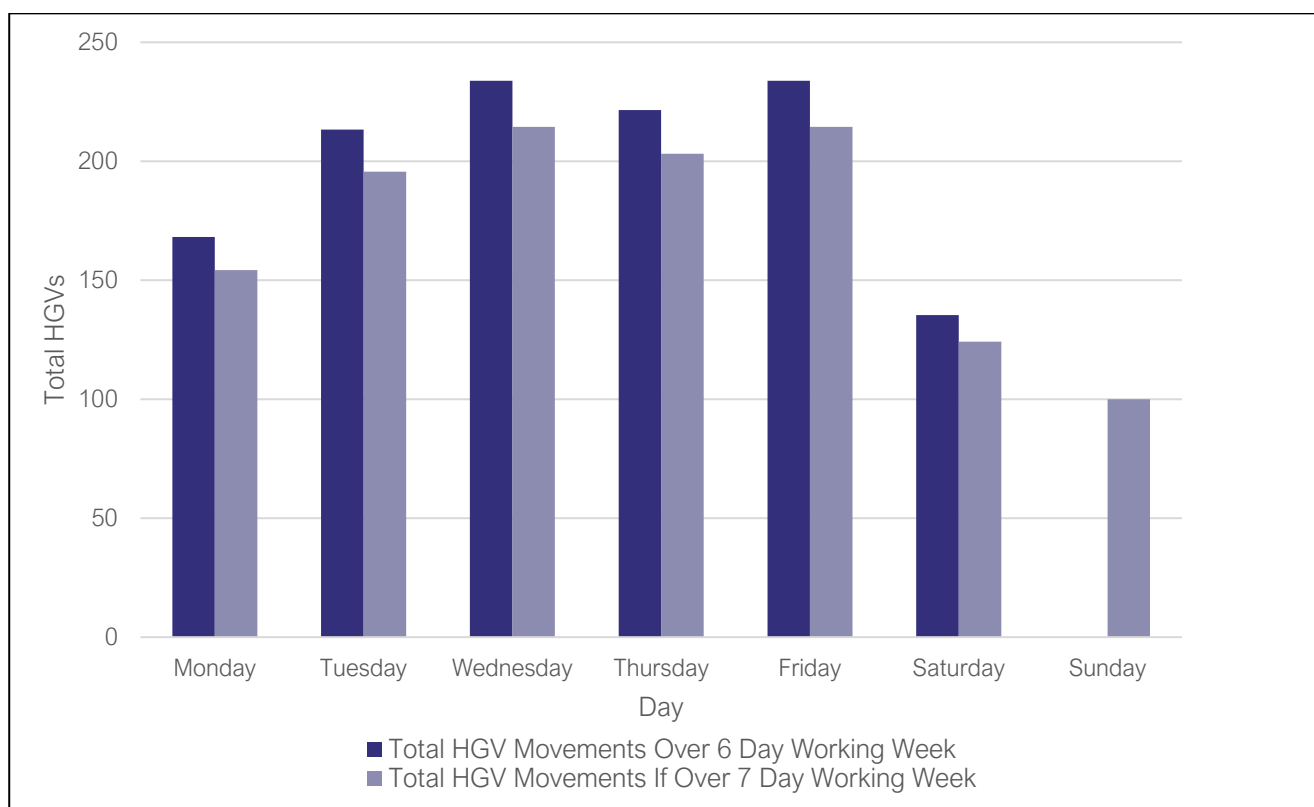


Figure 4.6– Sensitivity Test Results (2 million birds weekly)

Servicing Management Plan

- 4.19 Maelor Foods have an operational Service Management Plan and Driver Charter which outlines the ways in which Maelor Foods will successfully coordinate and manage all deliveries to and from the site, including how to maximise operational efficiency and be a good neighbour to residents and people who live locally.
- 4.20 The management strategy includes a dedicated booking system, coordination of maximum hourly deliveries outside of peak times (where possible), and close working with local suppliers to better plan journeys and reduce total trip distance travelled on the network.
- 4.21 This implemented Servicing Management Plan and Driver Charter will continue to be abided by to ensure that the increase in operations has minimal impact on the local community.

Timescales

- 4.22 It is expected that it will take 2-years to scaleup current operations to 2 million birds per week.

5 POTENTIAL TRAFFIC IMPACT

A525 / Pickhill Lane Junction

- 5.1 The A525 / Pickhill Lane priority junction will be redeveloped, with the new layout removing an existing conflict. Consideration has been given to the future operation of the junction with the proposed development.

2022 Surveyed Baseline

- 5.2 A traffic survey was undertaken of the A525 / Pickhill Lane priority junction on Wednesday 25th May 2022. From the traffic survey the following network peak hours were established:

- AM: 08:00 – 09:00; and
- PM: 16:30 – 17:30.

- 5.3 **Appendix B** at the rear of this report includes the full traffic count data obtained. **Figures 1 and 2** of **Appendix C** shows the 2022 baseline weekday morning and evening peak hours for the junction assessed.

Traffic Growth Rates

- 5.4 TEMPRO growth has been applied to enable future year base traffic flows to be calculated. As it is common practice to analyse the impact of developments 5 years after the baseline year, then baseline flows for 2027 are required. As the proposed extended capacity of the facility would be reached in two years (if permitted), then a 2027 assessment would include the final traffic generation of the site.
- 5.5 The 2022-2027 traffic growth factors using the National Transport Model (NTM) on the TEMPRO tool for the Wrexham 016 MSOA have been applied to the 2022 survey data. The growth factor for the AM peak is 1.0502 and for the PM peak it is 1.0514.
- 5.6 **Figures 3 and 4** of **Appendix C** show the forecasted baseline traffic flows on the study junctions in 2027.

Trip Distribution

- 5.7 The trips generated by the proposed expansion of the operations of the site include staff vehicles (cars) and operational vehicles (HGVs).
- 5.8 The number of additional staff-related vehicles that are expected to use the study junction has been calculated using the profile of arrivals and departures and the modal share data obtained from the November 2021 staff travel survey.

- 5.9 The survey results indicate that 14% of the staff arrives to site from 08:00 to 09:00, which equates to 18 out of the additional 125 employees. As 73% of the staff drive their car to site (and park it there), then 13 car arrivals are generated. In addition, 2% of the staff are dropped off by external vehicles (that drop-off the employee and the egress the site), an extra arrival and departure are generated. This means that an additional car arrival and 14 car departures will be generated during the AM peak as a result of the expansion of the operations.
- 5.10 Meanwhile between 16:30 to 17:30, 15% of the staff leave the site between 16:30 and 17:30, which equates to 19 employees. As 73% of the staff drove their car to site (and park it there), then 14 car departures are generated. In addition, 2% of the staff are picked up by external vehicles (that have to arrive to site in advance to pick up the employee), an extra arrival and departure are generated. This means that an additional car arrival and 15 car departures are expected during the PM peak as a result of the expansion of the operations.
- 5.11 In order to calculate the number of HGVs travelling to/from site during the assessed network peak hours, figures have been extrapolated from the increase in production vehicle trip rates calculated in **Figure 4.4**. The highest expected values from the whole working week during the peak periods have been applied (which in this case, the higher peak period values were recorded on Tuesday and Friday during the AM and PM peak, respectively). Therefore, an additional 4 arrivals and 4 departures are expected in the AM peak hour and 7 arrivals and 2 departures in the PM peak hour.
- 5.12 **Table 5.1** shows the total number of additional arrivals and departures expected per peak hour and type of vehicle.

	Arrivals	Departures	Total Two-way
Additional Car Trips (Staff)			
AM Network Peak	14	1	15
PM Network Peak	1	15	16
Additional HGV Trips (Production)			
AM Network Peak	4	4	8
PM Network Peak	7	2	9

Table 5.1 – Potential Two-way Vehicle Movements – Trip Generation

Development Trips

- 5.13 The proposed vehicle trips established in **Table 5.1** have been distributed and assigned accordingly based on the turning portions recorded. HGV and light vehicle turning proportions have been analysed and applied separately.
- 5.14 The full forecasted site trip distribution is shown in **Figures 5 to 8** of **Appendix C** while **Figures 9** and **10** show the traffic figures for the 2027 with development scenario (baseline plus development trips).

Modelling Scenarios

5.15 The proposed development scenarios to be modelled are:

- i) 2022 and 2027 (+5 years) Baseline with the current A525 / Pickhill Lane junction layout; and
- ii) 2027 with development (Baseline + Development Trips) with the proposed A525 / Pickhill Lane junction layout.

Modelling Software

5.16 PICADY, which is included in the Junctions 10 modelling package, have been used for the priority junction part of this assessment. The most useful modelled performance summary results output refers to the Ratio of Flow to Capacity (RFC) and queue length statistics calculated on each approach arm of the junction. An RFC of 1.00 indicates that the arm in question is operating at its theoretical capacity, whilst an RFC of 0.85 or less indicates that the arm is operating within its practical capacity. Queue length statistics give a proxy for predicted vehicle queuing that may build up.

Modelling Results

5.17 **Table 5.2** below presents the results of the modelling assessment scenarios.

Arm	AM Peak		PM Peak	
	RFC	Queue (PCU)	RFC	Queue (PCU)
2022 Baseline				
Pickhill Lane	0.04	0.1	0.13	0.2
A525 South	0.09	0.2	0.03	0.0
2027 Baseline				
Pickhill Lane	0.05	0.1	0.14	0.2
A525 South	0.10	0.2	0.03	0.1
2027 Baseline + Development				
Pickhill Lane	0.06	0.1	0.18	0.2
A525 South	0.14	0.3	0.05	0.1

Figure 5.2 – A525 / Pickhill Lane Junction Assessment

5.18 **Table 5.2** shows that this junction currently operates with spare capacity with a maximum Ratio of Flow Capacity of 0.09 in the AM peak (A525 South) and 0.13 in the PM peak (Pickhill Lane) and limited queuing (below 1 PCU during both peak hours). For the 2027 baseline scenario, RFC values are expected to grow up to 0.01 per arm.

- 5.19 For the 2027 with development scenario, with the proposed new layout in place, the junction is still expected to operate with spare capacity, with maximum RFC values being 0.14 during the morning peak hour (A525 South) and 0.18 during the evening peak hour (Pickhill Lane), and maximum queue values still being close to 0 PCUs in all cases.
- 5.20 Whilst HGV flows generated by the Maelor Foods facility will be higher during the interpeak hours than the morning and evening peak hours, this coincides with a corresponding reduction in background network flows. Therefore, based on our previous experience and judgement, it can be confirmed that the A525 / Pickhill Lane junction would also operate with plenty of spare capacity during the interpeak hours.

Pickhill Lane Impact

- 5.21 As previously discussed, the potential impact associated with the proposals would be an increase of up to 15 HGV movements per hour, when compared to the permitted operation.
- 5.22 It must be noted that this figure is a maximum and does not occur most of the time. During the majority of daytime hours, the change in HGV movements will be less than 9 additional movements per hour. This equates to an average of one extra vehicle every seven minutes onto Pickhill Lane.
- 5.23 Movements will be coordinated within the inter-peak period to maximise operational efficiency but also minimise potential conflict on the surrounding network. During the night (22:00 – 06:00), there will be an average of two additional HGV movements an hour.
- 5.24 Based on the information previously presented, it is evident that the potential operation of Maelor Foods will not result in a constant flow of HGVs and there will still be times throughout the day when there are no vehicle movements on Pickhill Lane given the nature of the link.
- 5.25 As previously shown, capacity of the Pickhill Lane link or the site access is not an issue. Additionally, the safety of Pickhill Lane and site access have not previously been an issue either, and that conclusion is unlikely to change as a result.
- 5.26 With reference to residential amenity it should be noted that the existing residential properties on Pickhill Lane have a combined frontage of approximately 70 metres. When considering the HGV movements to and from the site, it is likely that a vehicle will have passed the properties within approximately 10 seconds, minimising the amount of time that any vehicle is in the immediate vicinity.
- 5.27 The existing properties are also set back from the road approximately 10 metres, there are boundary treatments (i.e. hedge and other vegetation, fence and wall), each property has double glazing and there are private garden spaces approximately 20m from the road, screened by the properties. A separate noise assessment has been commissioned by Maelor Foods and should be read in conjunction with this Transport Assessment.

- 5.28 In relation to existing infrastructure, whilst it is acknowledged that the site no longer retains the consent for a separate logistics/haulage operation anymore, it is still worth highlighting that in the past Pickhill Lane was already used by 140 to 160 HGVs driving daily to and from the development site under its former use. The carriageway and other highway infrastructure will continue to accommodate regular HGV movements.

6 TRAVEL PLAN STRATEGY UPDATE

Travel Plan Implementation

- 6.1 Since 2015, Maelor Foods has undergone a Travel Planning process in relation to its site operations and staff travel behaviours.
- 6.2 A Full Travel Plan was submitted in 2019 to fulfil the obligations of Condition 12 of application P/2017/1032 to process 1 million birds per week. A copy of this Travel Plan is provided as **Appendix E** and this Chapter must be read in conjunction with this document.
- 6.3 The Travel Plan contained an Action Plan which sets the key actions to take in order to make that document work, including their timescales and who is responsible to take them.
- 6.4 As committed in the Travel Plan, a Travel Plan Coordinator (TPC) has already been appointed, who is monitoring the Travel Plan on a regular basis and the associated targets reviewed annually.

Travel Plan Objectives

- 6.5 The on-site Travel Plan currently identifies five overarching objectives it wishes to and continues to address through the ongoing development and implementation of the Travel Plan. These are as follows:
 - To decrease the number of single-occupancy vehicles by 10%;
 - To increase the cycling mode share by 2%, for people who live in settlements within an acceptable distance from the site;
 - To reduce CO2 emissions;
 - To increase and promote car sharing after 3 years of the adoption of the Travel Plan;
 - Ensure all staff are aware of sustainable travel initiatives.
- 6.6 These objectives are still relevant and will give direction to the Travel Plan over the short, medium and long term.

Travel Plan Measures

- 6.7 The existing Travel Plan provides a set of measures to ensure that the above objectives are achieved. These measures have been reviewed and still remain fit for purpose.
- 6.8 A number of measures have been implemented (i.e. travel information pack for staff and website updates) with ongoing consideration of additional measures such as a car share database, car share spaces in the car park, cycle parking and changing facilities. In addition, a review of potential opportunities has been progressed in light of Covid impacts on travel patterns and working practices. Further updates will be provided in the formal Travel Plan update at the end of the year.

Travel Plan Targets & Review

- 6.9 Preliminary modal split targets were set as part of the current Travel Plan based on travel to work 2011 census data, with 85% of the staff being expected to drive alone (single occupancy car trips) to the site.
- 6.10 As committed in the Travel Plan, Maelor Foods undertook a comprehensive staff travel survey to record staff travel behaviour. This survey was undertaken in November 2021 and has been used to provide the formal baseline which is being used to monitor travel plan progress over time.
- 6.11 As part of this update, the future modal split targets have been refined based on the November 2021 staff travel survey (see **Table 6.1**), remaining in line with the main objectives set on the Travel Plan.

Travel Mode	Initial Estimated Baseline (2011 Census Data)	New Baseline (from November 2021 surveys)	+ 1 Year Target	+ 2 Year Target	+ 3 Year Target	+ 4 Year Target	+ 5 Year Target
Car Driver	85%	49%	47%	45%	42%	40%	39%
Car Sharing	6%	40%	42%	44%	45%	46%	47%
Cycling and Walking	5%	5%	5%	5%	6%	7%	7%
Public Transport	3%	0%	0%	0%	1%	1%	1%
Other	1%	6%	6%	6%	6%	6%	6%

Table 6.1 – Future Modal Split Targets

- 6.12 New staff travel surveys will be undertaken in November 2022 in order to monitor the evolution of the staff modal split against the new targets.

7 SUMMARY & CONCLUSIONS

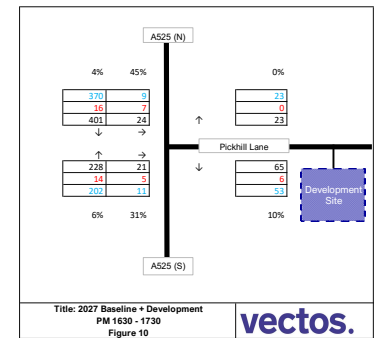
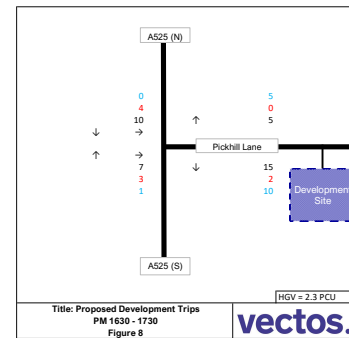
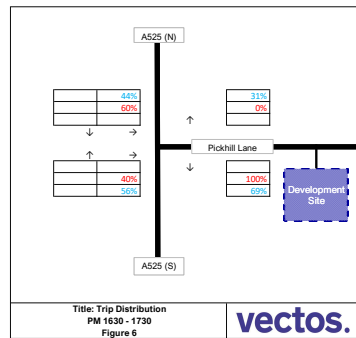
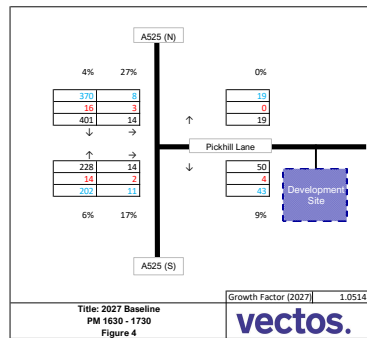
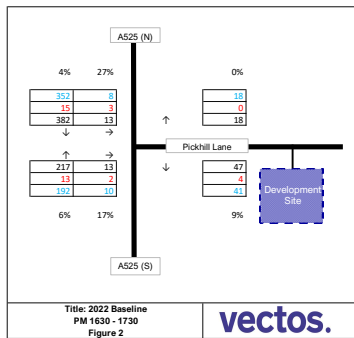
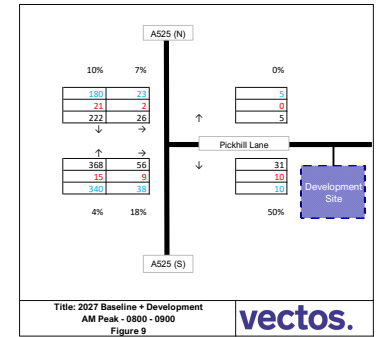
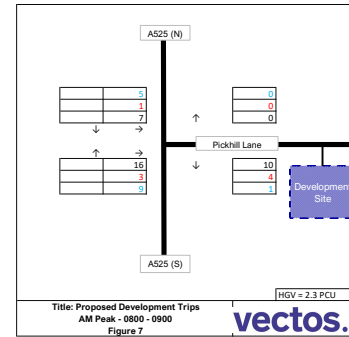
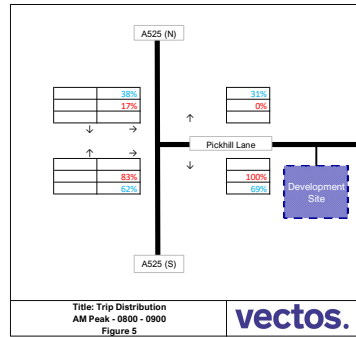
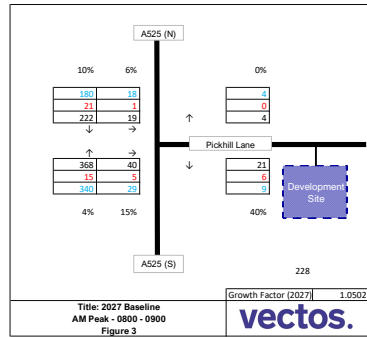
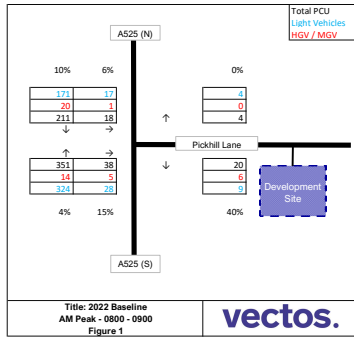
- 7.1 Vectos have been appointed by Maelor Foods to provide highways and transport advice in support of development proposals to improve and expand existing poultry processing capabilities at the Maelor Foods site off Pickhill Lane, Wrexham, LL13 0UE.
- 7.2 There has been an increase in market demand with a desire for more local, British produce thereby reducing the reliance on imports. The condition restricting the production of birds per week at Maelor Foods means that there is insufficient flexibility to respond to general changes in market demand.
- 7.3 In order to provide additional flexibility to the operation of the site, Maelor Foods are seeking to further increase production to 2 million birds per week, with the prospect of 125 additional jobs.
- 7.4 Use would be made of existing access points to the site which were previously subject to improvement. No changes are proposed externally to the existing buildings, service yard or car parking, which are sufficient for the development demands.
- 7.5 The A525 / Pickhill Lane will be subject to improvements which will realign the junction to facilitate improved movements of larger vehicles.
- 7.6 A network review has been conducted with May 2022 survey data collected for the A525 and Pickhill Lane in the vicinity of the site. This has highlighted that the network continues to operate with spare capacity and low flows throughout the day. In addition, there have been no recorded accidents on the network in the most recent 5-year period.
- 7.7 The potential impact associated with the proposals would be an increase of up to 15 HGV movements per hour, when compared to the permitted operation. It must be noted that this figure is a maximum and does not occur most of the time. During the majority of daytime hours, the change in HGV movements will be less than 9 additional movements per hour. This equates to an average of one extra vehicle every seven minutes. The maximum hourly movements will continue to be coordinated within the inter-peak period to maximise operational efficiency but also minimise potential conflict on the surrounding network. Movements will also be coordinated to ensure that there is minimal activity during night-time (22:00 – 06:00) hours.
- 7.8 The uplift in staff numbers can be accommodated for on the local highway network, with shift start and finish times staggered throughout the day.
- 7.9 The additional HGV movements will be subject to an existing management strategy that includes a dedicated booking system, coordination of deliveries outside of peak times, and close working with local suppliers to better plan journeys and reduce total trip distance travelled on the network.
- 7.10 With reference to residential amenity, it should be noted that existing properties are set back from the road approximately 10 metres, there are boundary treatments, private garden spaces and the additional HGVs will pass within a short duration of time.

- 7.11 Overall, it is considered that although there will be an increase in trip movements associated with the development proposals, there are mechanisms in place to manage arrivals and departures and a significant highway safety improvement is proposed at the A525/Pickhill Lane junction. The phased increase up to 2 million birds will allow movements to be monitored and managed, and when combined with the mitigation proposed, it is considered that the development proposals could be accommodated on the local highway network.

Appendix A – Staff Travel Survey Results

Form ID	Q1 Home Postcode	Q2 Gender	Q3 Age	Q4 Do you work	Q5 Normal Start Time	Q5 Normal Finish Time	Q6 Form of Transport Normally Used	Q6 If Other	Q7 If you drive to work Other Transport Considered	Q8 Travel by PT, Walk, Cycle	Q8 If Other	Q9 Consider Car Sharing	Q10 Do you have a disability that affects your travel arrangements	Q10 If so, do you require a disabled parking space	Q11 If Car Driver, what are main reasons	Q12 Travel more sustainably	Q13 Views and Ideas
1	LL13 7AG	Female	25-34	Part Time	08:30	04:30	Car (as driver on my own)					Yes occasionally	No	No	activities before/after work		
2	LL13 9PE	Female	25-34	Full Time	07:15	19:15	Car (as driver with passenger)		Bus	My home location is close to a service stop		Yes occasionally	No	No	activities before/after work		
3	LL13 9HA	Female	35-44	Full Time	04:30	16:30	Car (as driver on my own)		Bus			Yes occasionally	No	No	More convenient Public Trans Services		
4	LL13 8QR		25-34	Full Time	04:30	16:30	Car (as driver with passenger)		Bus	Other	I don't have a car	Yes occasionally	No	No	Help with Public Trans Tickets		
5	LL14 1ST	Female	25-44	Full Time	07:15	19:15	Car (as driver on my own)		Car Share			Yes occasionally	No	No	Available Trans Info at work		
6	LL13 8NT	Female	25-44	Full Time	04:30	19:15	Car (as driver on my own)		Bicycle	It shortens my journey time		Yes occasionally	No	No	Tax Breaks Cycle Purchases		
7	CH6 7PY	Female	35-44	Full Time	07:30	16:30	Car (as driver on my own)		Car Share			Yes regularly	No	No	Cheapest Option	Other	
8	LL1410T	Male	45-54	Full Time	07:30	16:00	Car (as driver with passenger)			Other	Taxi, Wife is not available to drive me	No	No	No	More convenient Public Trans Services	I live 15miles from work and my wife has flexible hours and works on an industrial estate so its very easy for her to drive me from work.	
9	CH7 1PL	Male	45-54	Full Time	07:00	16:30	Car (as driver on my own)		Car Share			Yes occasionally	No	No	Shorter journey time	Flexible work patterns	30 min car journey opposed to 90 min on bus.
10	LL11 2ZH	Female	45-54	Full Time	08:00	16:30	Car (as driver on my own)		Car Share			Yes occasionally	No	No	activities before/after work	The finish time is good as I beat traffic from the industrial estate.	
11	LL1420W	Female	25-44	Full Time	08:00	16:30	Car (as driver on my own)					No	No	No			
12	LL11 2AP	Male	45-54	Full Time	07:30	17:30	Car (as driver on my own)					No	No	No			
13	LL11 2AP	Male	45-54	Full Time	07:30	17:30	Car (as driver on my own)		Bicycle			No	No	No			Flexible working times
14	LL13 9TZ	Female	35-44	Full Time	07:45	16:30	Car (as driver on my own)		Car Share			Yes occasionally	No	No	Cheapest Option		
15	LL13 7BY	Female	35-44	Full Time	08:00	16:30	Other (specify)	passenger in car	Bus		I don't have a DL	No	No	No			it will be possible to have a bus to work it'll be great.
16	LL13 9AZ	Female	45-54	Full Time	08:00	17:00	Other (specify)	Taxi / partner		I don't have access to a car		No	No	No	Cheapest Option		
17	LL13 7HL	Male	55 or Over				Car (as driver on my own)		Bus			No	No	No	Cheapest Option		
18	LL14 3RD	Male	55 or Over	Part Time	VARIABLES		Car (as driver on my own)					No	No	No	Cheapest Option		No public transport
19	LL21 9AW	Male	55 or Over	Full Time	ANY		Car (as driver on my own)		Motorbike			No	No	No		Other	It takes an hour in my car, theres no public transport
20	LL13 8AY	Male	45-54	Full Time	22:00	03:00	Car (as driver on my own)		Bicycle			Yes occasionally	No	No	Shorter journey time		
21	SY13 1HP	Male	35-44	Full Time	ANY		Car (as driver on my own)					Yes occasionally	No	No			
22	LL11 2BO	Female	35-44	Full Time	08:30	17:00	Car (as driver on my own)		Bus			Yes occasionally	No	No	Shorter journey time	More convenient Public Trans Services	
23	LL14	Female	35-44	Full Time	07:45	18:45	Car (as driver with passenger)		Car Share	I don't have access to a car		Yes occasionally	No	No	More convenient Public Trans Services		
24	LL13 7VP	Male	55 or Over	Full Time	07:45	?	Car (as driver on my own)		Car Share			Yes occasionally	No	No			
25	LL13 HBN	Male	25-34	Full Time	07:45	?	Car (as driver with passenger)		Car Share	I don't have access to a car		No	No	No		More convenient Public Trans Services	
26	SY13 3HN	Female	35-44		07:45	18:45	Other (specify)	Husband				No	No	No		Help with Public Trans Tickets	
27	SY11 3LF	Male	45-54	Part Time	15:40	20:00	Car (as driver on my own)					Yes occasionally	No	No			
28	LL13 6LU	Male	Under 25	Part Time	07:45	18:45	Other (specify)	Lift	Bicycle	its cost effective		No	No	No		Other	
29	LL14 1HX	Female	Under 25	Full Time	07:45	18:45	Other (specify)	Lift				No	No	No			
30	LL13 7NH	Female	25-54	Full Time	07:45	18:45	Car (as driver on my own)		Bus	My home location is close to a service stop		Yes regularly	No	No	collect/drop off others	Flexible work patterns	
31	LL1 7T5	Female	55 or Over	Full Time	07:45	18:45	Other (specify)	Taxi	Other		Only way to work	No	No	No			
32	LL13 05Z	Male	45-54	Full Time	07:45	18:45	Bicycle			Its cost effective		No	No	No		Tax Breaks Cycle Purchases	A covered bike stand would be nice to keep the rain off. Bikes get wet and can rust parts.
33	LL11 5AE	Male	25-34	Full Time	07:45	18:45	Motorbike		Car Share		Awaiting licence re	Yes occasionally	No	No	collect/drop off others		
34	LL13	Male	25-34	Full Time	07:15		Car (as driver on my own)		Car Share				No	No			
35	LL13 9AB	Female	25-34	Full Time	07:45	18:45	Car (as driver with passenger)					Yes occasionally	No	No	Cheapest Option		
36	LL11	Male	35-44	Full Time	07:15		Car (as driver on my own)					No	No	No			Work bus provided
37	LL11 3NZ	Male	Under 25	Full Time	22:15	06:30	Other (specify)	passenger in car				No	No	No			
38	LL11 30Z	Male	45-54	Full Time	22:00	06:15	Other (specify)	passenger in car				Yes occasionally	No	No		Flexible work patterns	12 HOURS / 4 ON AND 4 OFF
39	LL14 1PW	Male	Under 25	Full Time	7:15	06:30	Other (specify)	passenger in car		I don't have access to a car		No	No	No	Available Trans Info at work		
40	LL11 4EY	Male	25-34	Full Time	22:15	06:30	Car (as driver with passenger)		Car Share			Yes regularly	No	No	Shorter journey time	Other	
41	LL13 90E		25-34	Full Time	18:15	06:30	Car (as driver with passenger)			I don't have access to a car		Yes regularly	No	No			
42		Male	35-44	Full Time	23:00	06:15	Car (as driver with passenger)		Walk	Its cost effective		No	No	No			
43		Male	Under 25	Full Time	22:15	06:30	Car (as driver with passenger)		Walk	Its cost effective		No	No	No			
44	LL142ET	Male	25-34	Full Time	18:00	10:15	Car (as driver on my own)		Car Share			Yes regularly	No	No		Designated Park Spaces for Car Sharers	
45	LL11 2AP		35-44	Full Time	21:00	06:00	Car (as driver on my own)		Car Share	Other	Own car	Yes regularly	No	No	collect/drop off others	More convenient Public Trans Services	
46	LL11 3BY	Male	Under 25	Full Time	22:00	06:15	Car (as driver with passenger)		Bus	Its cost effective		Yes occasionally	No	No			
47	LL13 7FF	Female	45-54	Full Time	05:00	04:15	Other (specify)	passenger in car	Car Share	I don't have access to a car		No	No	No			Back to work scheme would help
48	LL13 8QR	Male	25-34	Full Time	04:30	17:30	Car (as driver on my own)					Yes regularly	No	No	activities before/after work		
49	LL13 7EG	Female	35-44	Full Time	05:00	16:00	Car (as driver on my own)					Yes occasionally	No	No			
50	LL13 7EG	Male	Under 25	Full Time	05:00	16:00	Car (as driver on my own)					Yes occasionally	No	No			
51	LL13 8JJ		45-54		05:00		Car (as driver with passenger)		Bus	Its cost effective		Yes regularly	No	No		Help with Public Trans Tickets	I don't have a car, mailor foods can help with transport
52	LL13 7TS	Female	45-54	Full Time	05:00	18:00	Motorbike		Car Share	I don't have access to a car			No	No		More convenient Public Trans Services	
53	LL13 9HA	Female	45-54	Full Time	05:15	16:15	Car (as driver with passenger)		Bus	I don't have access to a car		No	No	No			
54	LL13 9PD	Female	25-34	Full Time	06:00	16:00	Car (as driver on my own)		Bus	Its cost effective		Yes regularly	No	No	activities before/after work	Help with Public Trans Tickets	
55	LL13 7TS	Female	45-54	Full Time	05:00		Other (specify)	Walk		I don't have access to a car		No	No	No	I have a mobility impairment/disability		
56	LL13 7TG	Female	55 or Over	Full Time	05:15	06:15	Car (as driver with passenger)	passenger in car	Bus	I don't have access to a car		Yes regularly	No	No	activities before/after work	Personalised journey plan	It would be great if this company would transport those who do not have a drivers licence we would no longer depend on our colleagues and we would
57	SY12 9LU	Female	55 or Over	Full Time	04:30		Car (as driver on my own)		Other			No	No	No	Cheapest Option	Other	I live in the country and there is no public transport at the time I leave for work
58	LL12 7BE	Male	35-44	Full Time	08:30	18:30	Bicycle		Bicycle	Other	SPORT	No	No	No	Cheapest Option		
59	LL14 1HX	Male	Under 25	Full Time	08:30	18:00	Car (as driver with passenger)		Car Share	My home location is close to a service stop		No	No	No	Cheapest Option	Other	I don't have any ideas
60	LL13 7AS	Female	45-54	Full Time	09:00	18:00	Car (as driver with passenger)		Car Share	I don't have access to a car		Yes regularly	No	No	Cheapest Option		The company to provide transport to the workplace
61	LL13 8QR	Female	45-54	Full Time	09:00	18:00	Car (as driver with passenger)		Car Share	My home location is close to a service stop		No	No	No	Cheapest Option		A bus or minivan for those who don't have cars. Have to arrange different transport when their car is not available.
62	LL13 8HU		Male	45-54	Full Time	04:30	16:30	Other (specify)	Car share								
63	LL13 8HE	Male	25-34	Full Time	05:00	16:00	Bicycle		Bicycle	I don't have access to a car					Personalised journey plan		
64	LL13 8HE	Male	45-54	Full Time	05:00	16:00	Other (specify)	Car share							Available Trans Info at work		
65	LL13 7PG	Female	45-54	Full Time	05:00	16:00	Other (specify)	Car share	Car Share						Available Trans Info at work		
66	SY11 1DH	Male	45-54	Full Time	05:00	16:00	Car (as driver on my own)		Car Share			Yes occasionally	No	No	Cheapest Option	Available Trans Info at work	
67	LL11 1GL	Male	45-54		05:00	16:00	Other (specify)	Car share				No	No	No		Flexible work patterns	
68	LL14 4DY	Male	35-44	Full Time	05:00	16:00	Other (specify)	Car share	Car Share			No	No	No			
69	LL12 7AU	Male	45-54	Full Time	05:00	16:00	Car (as driver on my own)		Bus			Yes occasionally	No	No		Flexible work patterns	
70	LL14 4HQ	Male	25-34	Full Time	05:00	16:00	Other (specify)	Car share	Car Share			No	No	No		Personalised journey plan	
71	LL13 8QR	Male	35-44	Full Time	04:30	16:30			Car Share			Yes occasionally	No	No	Cheapest Option		Its my choice and I really need my own car due to child and I have a different route to drop and collect from school. It's the fastest way to get to work, school and home.
72	LL13 7EG	Male	45-54	Full Time	04:00	16:00	Car (as driver on my own)		Car Share			No	No	No	collect/drop off others		
73	LL11 2HR	Male	45-54	Full Time	05:00	16:00	Car (as driver with passenger)		Bus	I don't have access to a car		Yes regularly	No	No	Cheapest Option		
74	LL11 2NR	Male	Under 25	Full Time	05:00	16:00	Car (as driver on my own)		Car Share			Yes regularly	No	No	Cheapest Option	Help with Public Trans Tickets	
75	LL11 2NR	Male	25-34	Full Time	05:00	16:00	Car (as driver with passenger)		Bus	My home location is close to a service stop		Yes regularly	No	No	Cheapest Option	Help with Public Trans Tickets	
76	LL11 2NR	Male	25-34	Full Time	04:00	16:00	Car (as driver with passenger)		Bus			Yes regularly	No	No	Cheapest Option	Help with Public Trans Tickets	
77	LL13 8EA	Male	55 or Over	Full Time	05:00	15:00	Motorbike		Bus			No	No	No			
78	LL13 7AS	Female	45-54		05:15	16:15	Car (as driver with passenger)		Car Share			No	No	No			
79	LL13 7TG	Male	55 or Over	Full Time	05:00	16:00	Car (as driver on my own)		Car Share			Yes regularly	No	No	collect/drop off others	Help with Public Trans Tickets	It would be good for those that don't drive to sort out a public transport.
80	LL13 7AS	Male	45-54	Full Time	05:00	16:00	Car (as driver on my own)		Car Share	I feel safe travelling this way		Yes regularly	No	No	collect/drop off others	Help with Public Trans Tickets	
81	LL13 8HE	Male	35-44	Full Time	05:00	16:00	Car (as driver on my own)		Walk			No	No	No	Shorter journey time		
82	LL12 8HF	Male	45-54	Full Time	06:00	18:00	Car (as driver on my own)					No	No	No	Shorter journey time		
83	LL11 6LW	Male	35-44	Full Time	06:00	18:00	Car (as driver on my own)		Car Share			No	No	No	Cheapest Option	Flexible work patterns	
84	CH7 4UJ	Male	35-44	Full Time	06:00	18:00	Car (as driver on my own)					No	No	No	Cheapest Option	Flexible work patterns	
85	CH5 5YD	Male	35-44	Full Time	06:00	15:30	Car (as driver on my own)		Bus	I don't have access to a car		Yes occasionally	No	No	Cheapest Option	Help with Public Trans Tickets	
86	LL11 1EL	Male	25-34	Full Time	06:00	15:00	Bicycle		Bicycle	It shortens my journey time		No	No	No		More convenient Public Trans Services	Extra camera fitted on bike parking. My pump got stolen yesterday and I cant do anything with it.
87	LL11 6FO	Male	55 or Over	Full Time	07:00	16:30	Car (as driver on my own)		Bus			No	No	No	Shorter journey time	More convenient Public Trans Services	
88	CH7 6GJ	Male	55 or Over	Full Time	07:00	16:30	Car (as driver on my own)		Motorbike			No	No	No	Cheapest Option		
89	SY11 2PF	Male	45-54	Full Time	06:00	18:00	Car (as driver on my own)					No	No	No	Cheapest Option	Other	No public transport to where we work from my home
90	LL13 7DY	Male	45-54	Full Time	06:00	18:00	Car (as driver on my own)					No	No	No	activities before/after work		
91	CH65	Male	45-54	Full Time	06:30	16:00	Car (as driver on my own)		Train			No	No	No			
92	LL12 7YS	Female	45-54	Full Time	09:00	18:00											

Appendix B – Traffic Count Data



Appendix C – Traffic Diagrams

Summary of Key Metrics														
Category	Sub-Category	Value	Unit	Target	Variance	Notes	Category	Sub-Category	Value	Unit	Target	Variance	Notes	Category
Financial	Revenue	1,200,000	USD	1,150,000	50,000	Exceeded target by 50,000 USD	Operational	Production	50,000	Units	48,000	2,000	Exceeded target by 2,000 units	Human Resources
	Cost of Goods Sold	750,000	USD	760,000	-10,000	Below target by 10,000 USD		Quality Control	95%	%	92%	3%	Improved quality control	
	Gross Profit	450,000	USD	390,000	60,000	Exceeded target by 60,000 USD		Defects	5%	%	8%	-3%	Reduced defects	
	Operating Expenses	300,000	USD	310,000	-10,000	Below target by 10,000 USD		Customer Satisfaction	85%	%	80%	5%	Improved customer satisfaction	
	Net Income	150,000	USD	80,000	70,000	Exceeded target by 70,000 USD		Employee Retention	90%	%	85%	5%	Improved employee retention	
	EBITDA	200,000	USD	190,000	10,000	Exceeded target by 10,000 USD		Training Hours	1,000	Hours	900	100	Exceeded target by 100 hours	
	Capital Expenditure	100,000	USD	110,000	-10,000	Below target by 10,000 USD		Safety Incidents	2	Incidents	3	-1	Reduced safety incidents	
	Research & Development	50,000	USD	55,000	-5,000	Below target by 5,000 USD		Employee Turnover	10%	%	12%	-2%	Reduced employee turnover	
	Marketing & Sales	30,000	USD	35,000	-5,000	Below target by 5,000 USD		Product Launches	3	Launches	2	1	Exceeded target by 1 launch	
	Administrative	20,000	USD	22,000	-2,000	Below target by 2,000 USD		Patent Filings	1	Filings	0	1	Exceeded target by 1 filing	

Detailed Financial Performance														
Month	Revenue	COGS	Gross Profit	Operating Expenses	Net Income	EBITDA	CapEx	R&D	M&S	Admin	Revenue	COGS	Gross Profit	Operating Expenses
Jan	100,000	60,000	40,000	20,000	20,000	25,000	10,000	10,000	5,000	5,000	100,000	60,000	40,000	20,000
Feb	110,000	65,000	45,000	22,000	23,000	27,000	11,000	11,000	5,500	5,500	110,000	65,000	45,000	22,000
Mar	120,000	70,000	50,000	24,000	26,000	29,000	12,000	12,000	6,000	6,000	120,000	70,000	50,000	24,000
Apr	130,000	75,000	55,000	26,000	29,000	31,000	13,000	13,000	6,500	6,500	130,000	75,000	55,000	26,000
May	140,000	80,000	60,000	28,000	32,000	33,000	14,000	14,000	7,000	7,000	140,000	80,000	60,000	28,000
Jun	150,000	85,000	65,000	30,000	35,000	35,000	15,000	15,000	7,500	7,500	150,000	85,000	65,000	30,000
Jul	160,000	90,000	70,000	32,000	38,000	37,000	16,000	16,000	8,000	8,000	160,000	90,000	70,000	32,000
Aug	170,000	95,000	75,000	34,000	41,000	39,000	17,000	17,000	8,500	8,500	170,000	95,000	75,000	34,000
Sep	180,000	100,000	80,000	36,000	44,000	41,000	18,000	18,000	9,000	9,000	180,000	100,000	80,000	36,000
Oct	190,000	105,000	85,000	38,000	47,000	43,000	19,000	19,000	9,500	9,500	190,000	105,000	85,000	38,000
Nov	200,000	110,000	90,000	40,000	50,000	45,000	20,000	20,000	10,000	10,000	200,000	110,000	90,000	40,000
Dec	210,000	115,000	95,000	42,000	53,000	47,000	21,000	21,000	10,500	10,500	210,000	115,000	95,000	42,000

Operational Performance Metrics														
Month	Production	Quality	Defects	Customer Sat.	Employee Ret.	Training Hrs	Safety Inc.	Employee Turn.	Product Launches	Patent Filings	Production	Quality	Defects	Customer Sat.
Jan	4,000	92%	5%	80%	85%	100	3	12%	1	1	4,000	92%	5%	80%
Feb	4,200	93%	4.5%	81%	86%	105	2.5	11.5%	1	1	4,200	93%	4.5%	81%
Mar	4,400	94%	4%	82%	87%	110	2	11%	1	1	4,400	94%	4%	82%
Apr	4,600	95%	3.5%	83%	88%	115	1.5	10.5%	1	1	4,600	95%	3.5%	83%
May	4,800	96%	3%	84%	89%	120	1	10%	1	1	4,800	96%	3%	84%
Jun	5,000	97%	2.5%	85%	90%	125	0.5	9.5%	1	1	5,000	97%	2.5%	85%
Jul	5,200	98%	2%	86%	91%	130	0.2	9%	1	1	5,200	98%	2%	86%
Aug	5,400	99%	1.5%	87%	92%	135	0.1	8.5%	1	1	5,400	99%	1.5%	87%
Sep	5,600	100%	1%	88%	93%	140	0.1	8%	1	1	5,600	100%	1%	88%
Oct	5,800	100%	0.8%	89%	94%	145	0.1	7.5%	1	1	5,800	100%	0.8%	89%
Nov	6,000	100%	0.5%	90%	95%	150	0.1	7%	1	1	6,000	100%	0.5%	90%
Dec	6,200	100%	0.3%	91%	96%	155	0.1	6.5%	1	1	6,200	100%	0.3%	91%

Human Resources Performance														
Month	Training Hrs	Safety Inc.	Employee Turn.	Product Launches	Patent Filings	Training Hrs	Safety Inc.	Employee Turn.	Product Launches	Patent Filings	Training Hrs	Safety Inc.	Employee Turn.	Product Launches
Jan	100	3	12%	1	1	100	3	12%	1	1	100	3	12%	1
Feb	105	2.5	11.5%	1	1	105	2.5	11.5%	1	1	105	2.5	11.5%	1
Mar	110	2	11%	1	1	110	2	11%	1	1	110	2	11%	1
Apr	115	1.5	10.5%	1	1	115	1.5	10.5%	1	1	115	1.5	10.5%	1
May	120	1	10%	1	1	120	1	10%	1	1	120	1	10%	1
Jun	125	0.5	9.5%	1	1	125	0.5	9.5%	1	1	125	0.5	9.5%	1
Jul	130	0.2	9%	1	1	130	0.2	9%	1	1	130	0.2	9%	1
Aug	135	0.1	8.5%	1	1	135	0.1	8.5%	1	1	135	0.1	8.5%	1
Sep	140	0.1	8%	1	1	140	0.1	8%	1	1	140	0.1	8%	1
Oct	145	0.1	7.5%	1	1	145	0.1	7.5%	1	1	145	0.1	7.5%	1
Nov	150	0.1	7%	1	1	150	0.1	7%	1	1	150	0.1	7%	1
Dec	155	0.1	6.5%	1	1	155	0.1	6.5%	1	1	155	0.1	6.5%	1

Product Development Metrics														
Month	Production	Quality	Defects	Customer Sat.	Employee Ret.	Training Hrs	Safety Inc.	Employee Turn.	Product Launches	Patent Filings	Production	Quality	Defects	Customer Sat.
Jan	4,000	92%	5%	80%	85%	100	3	12%	1	1	4,000	92%	5%	80%
Feb	4,200	93%	4.5%	81%	86%	105	2.5	11.5%	1	1	4,200	93%	4.5%	81%
Mar	4,400	94%	4%	82%	87%	110	2	11%	1	1	4,400	94%	4%	82%
Apr	4,600	95%	3.5%	83%	88%	115	1.5	10.5%	1	1	4,600	95%	3.5%	83%
May	4,800	96%	3%	84%	89%	120	1	10%	1	1	4,800	96%	3%	84%
Jun	5,000	97%	2.5%	85%	90%	125	0.5	9.5%	1	1	5,000	97%	2.5%	85%
Jul	5,200	98%	2%	86%	91%	130	0.2	9%	1	1	5,200	98%	2%	86%
Aug	5,400	99%	1.5%	87%	92%	135	0.1	8.5%	1	1	5,400	99%	1.5%	87%
Sep	5,600	100%	1%	88%	93%	140	0.1	8%	1	1	5,600	100%	1%	88%
Oct	5,800	100%	0.8%	89%	94%	145	0.1	7.5%	1	1	5,800	100%	0.8%	89%
Nov	6,000	100%	0.5%	90%	95%	150	0.1	7%	1	1	6,000	100%	0.5%	90%
Dec	6,200	100%	0.3%	91%	96%	155	0.1	6.5%	1	1	6,200	100%	0.3%	91%

Customer Satisfaction Metrics														
Month	Production	Quality	Defects	Customer Sat.	Employee Ret.	Training Hrs	Safety Inc.	Employee Turn.	Product Launches	Patent Filings	Production	Quality	Defects	Customer Sat.
Jan	4,000	92%	5%	80%	85%	100	3	12%	1	1	4,000	92%	5%	80%
Feb	4,200	93%	4.5%	81%	86%	105	2.5	11.5%	1	1	4,200	93%	4.5%	81%
Mar	4,400	94%	4%	82%	87%	110	2	11%	1	1	4,400	94%	4%	82%
Apr	4,600	95%	3.5%	83%	88%	115	1.5	10.5%	1	1	4,600	95%	3.5%	83%
May	4,800	96%	3%	84%	89%	120	1	10%	1	1	4,800	96%	3%	84%
Jun	5,000	97%	2.5%	85%	90%	125	0.5	9.5%	1	1	5,000	97%	2.5%	85%
Jul	5,200	98%	2%	86%	91%	130	0.2	9%	1	1	5,200	98%	2%	86%
Aug	5,400	99%	1.5%	87%	92%	135	0.1	8.5%	1	1	5,400	99%	1.5%	87%
Sep	5,600	100%	1%	88%	93%	140	0.1	8%	1	1	5,600	100%	1%	88%
Oct	5,800	100%	0.8%	89%	94%	145	0.1	7.5%	1	1	5,800	100%	0.8%	89%
Nov	6,000	100%	0.5%	90%	95%	150	0.1	7%	1	1	6,000	100%	0.5%	90%
Dec	6,200	100%	0.3%	91%	96%	155	0.1	6.5%	1	1	6,200	100%	0.3%	91%

Employee Retention Metrics														
Month	Production	Quality	Defects	Customer Sat.	Employee Ret.	Training Hrs	Safety Inc.	Employee Turn.	Product Launches	Patent Filings	Production	Quality	Defects	Customer Sat.
Jan	4,000	92%	5%	80%	85%	100	3	12%	1	1	4,000	92%	5%	80%
Feb	4,200	93%	4.5%	81%	86%	105	2.5	11.5%	1	1	4,200	93%	4.5%	81%
Mar	4,400	94%	4%	82%	87%	110	2	11%	1	1	4,400	94%	4%	82%
Apr	4,600	95%	3.5%	83%	88%	115	1.5	10.5%	1	1	4,600	95%	3.5%	83%
May	4,800	96%	3%	84%	89%	120	1	10%	1	1	4,800	96%	3%	84%
Jun	5,000	97%	2.5%	85%	90%	125	0.5	9.5%	1	1	5,000	97%	2.5%	85%
Jul	5,200	98%	2%	86%	91%	130	0.2	9%	1	1	5,200	98%	2%	86%
Aug	5,400	99%	1.5%	87%	92%	135	0.1	8.5%	1	1	5,400	99%	1.5%	87%
Sep	5,600	100%	1%	88%	93%	140	0.1	8%	1	1	5,600	100%	1%	88%
Oct	5,800	100%	0.8%	89%	94%	145	0.1	7.5%	1	1	5,800	100%	0.8%	89%
Nov	6,000	100%	0.5%	90%	95%	150	0.1	7%	1	1	6,000	100%	0.5%	90%
Dec	6,200	100%	0.3%	91%	96%	155	0.1	6.5%	1	1	6,200	100%	0.3%	91%

Product Launch Metrics														
Month	Production	Quality	Cost	Time	Efficiency	Customer	Feedback	Support	Marketing	Sales	Profit	Growth	Retention	Churn
2023-01	1200	95%	\$150k	10d	80%	4.2	3.8	2.5	10%	5000	\$10k	5%	90%	10%
2023-02	1300	96%	\$160k	11d	82%	4.3	3.9	2.6	12%	5500	\$11k	6%	91%	9%
2023-03	1400	97%	\$170k	12d	85%	4.4	4.0	2.7	15%	6000	\$12k	7%	92%	8%
2023-04	1500	98%	\$180k	13d	88%	4.5	4.1	2.8	18%	6500	\$13k	8%	93%	7%
2023-05	1600	99%	\$190k	14d	90%	4.6	4.2	2.9	20%	7000	\$14k	9%	94%	6%
2023-06	1700	99.5%	\$200k	15d	92%	4.7	4.3	3.0	22%	7500	\$15k	10%	95%	5%
2023-07	1800	100%	\$210k	16d	95%	4.8	4.4	3.1	25%	8000	\$16k	11%	96%	4%
2023-08	1900	100%	\$220k	17d	97%	4.9	4.5	3.2	28%	8500	\$17k	12%	97%	3%
2023-09	2000	100%	\$230k	18d	98%	5.0	4.6	3.3	30%	9000	\$18k	13%	98%	2%
2023-10	2100	100%	\$240k	19d	99%	5.1	4.7	3.4	32%	9500	\$19k	14%	99%	1%
2023-11	2200	100%	\$250k	20d	100%	5.2	4.8	3.5	35%	10000	\$20k	15%	100%	0%
2023-12	2300	100%	\$260k	21d	100%	5.3	4.9	3.6	38%	10500	\$21k	16%	100%	0%
2024-01	2400	100%	\$270k	22d	100%	5.4	5.0	3.7	40%	11000	\$22k	17%	100%	0%
2024-02	2500	100%	\$280k	23d	100%	5.5	5.1	3.8	42%	11500	\$23k	18%	100%	0%
2024-03	2600	100%	\$290k	24d	100%	5.6	5.2	3.9	45%	12000	\$24k	19%	100%	0%
2024-04	2700	100%	\$300k	25d	100%	5.7	5.3	4.0	48%	12500	\$25k	20%	100%	0%
2024-05	2800	100%	\$310k	26d	100%	5.8	5.4	4.1	50%	13000	\$26k	21%	100%	0%
2024-06	2900	100%	\$320k	27d	100%	5.9	5.5	4.2	52%	13500	\$27k	22%	100%	0%
2024-07	3000	100%	\$330k	28d	100%	6.0	5.6	4.3	55%	14000	\$28k	23%	100%	0%
2024-08	3100	100%	\$340k	29d	100%	6.1	5.7	4.4	58%	14500	\$29k	24%	100%	0%
2024-09	3200	100%	\$350k	30d	100%	6.2	5.8	4.5	60%	15000	\$30k	25%	100%	0%
2024-10	3300	100%	\$360k	31d	100%	6.3	5.9	4.6	62%	15500	\$31k	26%	100%	0%
2024-11	3400	100%	\$370k	32d	100%	6.4	6.0	4.7	65%	16000	\$32k	27%	100%	0%
2024-12	3500	100%	\$380k	33d	100%	6.5	6.1	4.8	68%	16500	\$33k	28%	100%	0%
2025-01	3600	100%	\$390k	34d	100%	6.6	6.2	4.9	70%	17000	\$34k	29%	100%	0%
2025-02	3700	100%	\$400k	35d	100%	6.7	6.3	5.0	72%	17500	\$35k	30%	100%	0%
2025-03	3800	100%	\$410k	36d	100%	6.8	6.4	5.1	75%	18000	\$36k	31%	100%	0%
2025-04	3900	100%	\$420k	37d	100%	6.9	6.5	5.2	78%	18500	\$37k	32%	100%	0%
2025-05	4000	100%	\$430k	38d	100%	7.0	6.6	5.3	80%	19000	\$38k	33%	100%	0%
2025-06	4100	100%	\$440k	39d	100%	7.1	6.7	5.4	82%	19500	\$39k	34%	100%	0%
2025-07	4200	100%	\$450k	40d	100%	7.2	6.8	5.5	85%	20000	\$40k	35%	100%	0%
2025-08	4300	100%	\$460k	41d	100%	7.3	6.9	5.6	88%	20500	\$41k	36%	100%	0%
2025-09	4400	100%	\$470k	42d	100%	7.4	7.0	5.7	90%	21000	\$42k	37%	100%	0%
2025-10	4500	100%	\$480k	43d	100%	7.5	7.1	5.8	92%	21500	\$43k	38%	100%	0%
2025-11	4600	100%	\$490k	44d	100%	7.6	7.2	5.9	95%	22000	\$44k	39%	100%	0%
2025-12	4700	100%	\$500k	45d	100%	7.7	7.3	6.0	98%	22500	\$45k	40%	100%	0%
2026-01	4800	100%	\$510k	46d	100%	7.8	7.4	6.1	100%	23000	\$46k	41%	100%	0%
2026-02	4900	100%	\$520k	47d	100%	7.9	7.5	6.2	100%	23500	\$47k	42%	100%	0%
2026-03	5000	100%	\$530k	48d	100%	8.0	7.6	6.3	100%	24000	\$48k	43%	100%	0%
2026-04	5100	100%	\$540k	49d	100%	8.1	7.7	6.4	100%	24500	\$49k	44%	100%	0%
2026-05	5200	100%	\$550k	50d	100%	8.2	7.8	6.5	100%	25000	\$50k	45%	100%	0%
2026-06	5300	100%	\$560k	51d	100%	8.3	7.9	6.6	100%	25500	\$51k	46%	100%	0%
2026-07	5400	100%	\$570k	52d	100%	8.4	8.0	6.7	100%	26000	\$52k	47%	100%	0%
2026-08	5500	100%	\$580k	53d	100%	8.5	8.1	6.8	100%	26500	\$53k	48%	100%	0%
2026-09	5600	100%	\$590k	54d	100%	8.6	8.2	6.9	100%	27000	\$54k	49%	100%	0%
2026-10	5700	100%	\$600k	55d	100%	8.7	8.3	7.0	100%	27500	\$55k	50%	100%	0%
2026-11	5800	100%	\$610k	56d	100%	8.8	8.4	7.1	100%	28000	\$56k	51%	100%	0%
2026-12	5900	100%	\$620k	57d	100%	8.9	8.5	7.2	100%	28500	\$57k	52%	100%	0%
2027-01	6000	100%	\$630k	58d	100%	9.0	8.6	7.3	100%	29000	\$58k	53%	100%	0%
2027-02	6100	100%	\$640k	59d	100%	9.1	8.7	7.4	100%	29500	\$59k	54%	100%	0%
2027-03	6200	100%	\$650k	60d	100%	9.2	8.8	7.5	100%	30000	\$60k	55%	100%	0%
2027-04	6300	100%	\$660k	61d	100%	9.3	8.9	7.6	100%	30500	\$61k	56%	100%	0%
2027-05	6400	100%	\$670k	62d	100%	9.4	9.0	7.7	100%	31000	\$62k	57%	100%	0%
2027-06	6500	100%	\$680k	63d	100%	9.5	9.1	7.8	100%	31500	\$63k	58%	100%	0%
2027-07	6600	100%	\$690k	64d	100%	9.6	9.2	7.9	100%	32000	\$64k	59%	100%	0%
2027-08	6700	100%	\$700k	65d	100%	9.7	9.3	8.0	100%	32500	\$65k	60%	100%	0%
2027-09	6800	100%	\$710k	66d	100%	9.8	9.4	8.1	100%	33000	\$66k	61%	100%	0%
2027-10	6900	100%	\$720k	67d	100%	9.9	9.5	8.2	100%	33500	\$67k	62%	100%	0%
2027-11	7000	100%	\$730k	68d	100%	10.0	9.6	8.3	100%	34000	\$68k	63%	100%	0%
2027-12	7100	100%	\$740k	69d	100%	10.1	9.7	8.4	100%	34500	\$69k	64%	100%	0%
2028-01	7200	100%	\$750k	70d	100%	10.2	9.8	8.5	100%	35000	\$70k	65%	100%	0%
2028-02	7300	100%	\$760k	71d	100%	10.3	9.9	8.6	100%	35500	\$71k	66%	100%	0%
2028-03	7400	100%	\$770k	72d	100%	10.4	10.0	8.7	100%	36000	\$72k	67%	100%	0%
2028-04	7500	100%	\$780k	73d	100%	10.5	10.1	8.8	100%	36500	\$73k	68%	100%	0%
2028-05	7600	100%	\$790k	74d	100%	10.6	10.2	8.9	100%	37000	\$74k	69%	100%	0%
2028-06	7700	100%	\$800k	75d	100%	10.7	10.3	9.0	100%	37500	\$75k	70%	100%	0%
2028-07	7800	100%	\$810k	76d	100%	10.8	10.4	9.1	100%	38000	\$76k	71%	100%	0%
2028-08	7900	100%	\$820k	77d	100%	10.9	10.5	9.2	100%	38500	\$77k	72%	100%	0%
2028-09	8000	100%	\$830k	78d	100%	11.0	10.6	9.3	100%	39000	\$78k	73%	100%	0%
2028-10	8100	100%	\$840k	79d	100%	11.1	10.7	9.4	100%	39500	\$79k	74%	100%	0%
2028-11	8200	100%	\$850k	80d	100%	11.2	10.8	9.5	100%	40000	\$80k	75%	100%	0%
2028-12	8300	100%	\$860k	81d	100%	11.3	10.9	9.6	100%	40500	\$81k	76%	100%	0%
2029-01	8400	100%	\$870k	82d	100%	11.4	11.0	9.7	100%	41000	\$82k	77%	100%	0%
2029-02	8500	100%	\$880k	83d	100%	11.5	11.1	9.8	100%	41500	\$83k	78%	100%	0%
2029-03	8600	100%	\$890k	84d	100%	11.6	11.2	9.9	100%	42000	\$84k	79%	100%	0%
2029-04	8700	100%	\$900k	85d	100%	11.7	11.3	10.0	100%	42500	\$85k	80%	100%	0%
2029-05	8800	100%	\$910k	86d	100%	11.8	11.4	10.1	100%	43000	\$86k	81%	100%	0%
2029-06	8900	100%	\$920k	87d	100%	11.9	11.5	10.2	100%	43500	\$87k	82%	100%	0%
2029-07	9000	100%	\$930k	88d	100%	12.0	11.6	10.3	100%	44000	\$88k	83%	100%	0%
2029-08	9100	100%	\$940k	89d	100%	12.1	11.7	10.4	100%	44500	\$89k	84%	100%	0%
2029-09	9200	100%	\$950k	90d	100%	12.2	11.8	10.5	100%	45000	\$90k	85%	100%	0%
2029-10	9300	100%	\$960k	91d	100%	12.3	11.9	10.6	100%	45500	\$91k	86%	100%	0%
2029-11	9400	100%	\$970k	92d	100%	12.4	12.0	10.7	100%	46000	\$92k	87%	100%	0%
2029-12	9500	100%	\$980k	93d	100%	12.5	12.1	10.8	100%	46500	\$93k	88%	100%	0%
2030-01	9600	100%	\$990k	94d	100%	12.6	12.2	10.9	100%	47000	\$94k	89%	100%	0%
2030-02	9700	100%	\$1000k	95d	100%	12.7	12.3	11.0	100%	47500	\$95k	90%	100%	0%
2030-03	9800	100%	\$1010k	96d	100%	12.8	12.4	11.1	100%	48000	\$96k	91%	100%	0%
2030-04	9900	100%	\$1020k	97d	100%	12.9	12.5	11.2	100%	48500	\$97k	92%	100%	0%
2030-05	10000	100%	\$1030k	98d	100%	13.0	12.6	11.3	100%	49000	\$98k	93%	100%	0%
2030-06	10100	100%	\$1040k	99d	100%	13.1	12.7	11.4	100%	49500	\$99k	94%	100%	0%
2030-07	10200	100%	\$1050k	100d	100%	13.2	12.8	11.5	100%	50000	\$100k	95%	100%	0%
2030-08	10300	100%	\$1060k	101d	100%	13.3	12.9	11.6	100%	50500	\$101k	96%	100%	0%
2030-09	10400	100%	\$1070k	102d	100%	13.4	13.0	11.7	100%	51000	\$102k	97%	100%	0%
2030-10	10500	100%	\$1080k	103d	100%	13.5	13.1	11.8	100%	51500	\$103k	98%	100%	0%
2030-11	10600	100%	\$1090k	104d	100%	13.6	13.2	11.9	100%	52000	\$10			

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Year	1990s (1990-1999)					2000s (2000-2009)										2010s (2010-2019)										2020s (2020-2029)			Total	Average	Max
	1990	1991	1992	1993	1994	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022			
1990	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1991	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1992	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1993	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1994	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1995	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1996	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1997	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1998	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1999	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2000	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2001	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2002	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2003	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2004	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2005	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2006	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2007	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2008	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2009	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2010	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2011	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2012	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2013	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2014	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2015	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2016	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2017	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2018	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2019	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2020	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2021	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2022	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Year	Tactical Unit Metrics					Strategic Initiative Progress: Q3 2023															Overall Project Summary				
	Unit A	Unit B	Unit C	Unit D	Unit E	Initiative 1	Initiative 2	Initiative 3	Initiative 4	Initiative 5	Initiative 6	Initiative 7	Initiative 8	Initiative 9	Initiative 10	Initiative 11	Initiative 12	Initiative 13	Initiative 14	Initiative 15	Total Progress	Avg Score	Completion %	Key Milestone	
2020	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
2021	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
2022	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
2023	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
2024	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
2025	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
2026	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
2027	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
2028	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
2029	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
2030	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
2031	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
2032	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
2033	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	
2034	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	
2035	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	
2036	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
2037	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
2038	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	
2039	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	
2040	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	

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Year	Country	Population (Millions)					GDP (Billion USD)										Unemployment Rate (%)					Inflation Rate (%)				
		2010	2015	2020	2025	2030	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
2010	USA	308	318	328	338	348	14.5	16.5	18.5	20.5	22.5	12.5	13.5	14.5	15.5	16.5	5.5	5.5	5.5	5.5	5.5	2.5	2.5	2.5	2.5	2.5
2011	USA	309	319	329	339	349	14.6	16.6	18.6	20.6	22.6	12.6	13.6	14.6	15.6	16.6	5.6	5.6	5.6	5.6	5.6	2.6	2.6	2.6	2.6	2.6
2012	USA	310	320	330	340	350	14.7	16.7	18.7	20.7	22.7	12.7	13.7	14.7	15.7	16.7	5.7	5.7	5.7	5.7	5.7	2.7	2.7	2.7	2.7	2.7
2013	USA	311	321	331	341	351	14.8	16.8	18.8	20.8	22.8	12.8	13.8	14.8	15.8	16.8	5.8	5.8	5.8	5.8	5.8	2.8	2.8	2.8	2.8	2.8
2014	USA	312	322	332	342	352	14.9	16.9	18.9	20.9	22.9	12.9	13.9	14.9	15.9	16.9	5.9	5.9	5.9	5.9	5.9	2.9	2.9	2.9	2.9	2.9
2015	USA	313	323	333	343	353	15.0	17.0	19.0	21.0	23.0	13.0	14.0	15.0	16.0	17.0	6.0	6.0	6.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0
2016	USA	314	324	334	344	354	15.1	17.1	19.1	21.1	23.1	13.1	14.1	15.1	16.1	17.1	6.1	6.1	6.1	6.1	6.1	3.1	3.1	3.1	3.1	3.1
2017	USA	315	325	335	345	355	15.2	17.2	19.2	21.2	23.2	13.2	14.2	15.2	16.2	17.2	6.2	6.2	6.2	6.2	6.2	3.2	3.2	3.2	3.2	3.2
2018	USA	316	326	336	346	356	15.3	17.3	19.3	21.3	23.3	13.3	14.3	15.3	16.3	17.3	6.3	6.3	6.3	6.3	6.3	3.3	3.3	3.3	3.3	3.3
2019	USA	317	327	337	347	357	15.4	17.4	19.4	21.4	23.4	13.4	14.4	15.4	16.4	17.4	6.4	6.4	6.4	6.4	6.4	3.4	3.4	3.4	3.4	3.4
2020	USA	318	328	338	348	358	15.5	17.5	19.5	21.5	23.5	13.5	14.5	15.5	16.5	17.5	6.5	6.5	6.5	6.5	6.5	3.5	3.5	3.5	3.5	3.5
2021	USA	319	329	339	349	359	15.6	17.6	19.6	21.6	23.6	13.6	14.6	15.6	16.6	17.6	6.6	6.6	6.6	6.6	6.6	3.6	3.6	3.6	3.6	3.6
2022	USA	320	330	340	350	360	15.7	17.7	19.7	21.7	23.7	13.7	14.7	15.7	16.7	17.7	6.7	6.7	6.7	6.7	6.7	3.7	3.7	3.7	3.7	3.7
2023	USA	321	331	341	351	361	15.8	17.8	19.8	21.8	23.8	13.8	14.8	15.8	16.8	17.8	6.8	6.8	6.8	6.8	6.8	3.8	3.8	3.8	3.8	3.8
2024	USA	322	332	342	352	362	15.9	17.9	19.9	21.9	23.9	13.9	14.9	15.9	16.9	17.9	6.9	6.9	6.9	6.9	6.9	3.9	3.9	3.9	3.9	3.9
2025	USA	323	333	343	353	363	16.0	18.0	20.0	22.0	24.0	14.0	15.0	16.0												

Year	Age	Primary Education					Secondary Education (Grades 6-12)										Tertiary Education												Total	Enrollment Rate (%)	Gender Ratio (F/M)
		Enrollment	Students	Teachers	Ratio	Quality Index	Enrollment	Students	Teachers	Ratio	Quality Index	Enrollment	Students	Teachers	Ratio	Quality Index	Enrollment	Students	Teachers	Ratio	Quality Index	Enrollment	Students	Teachers	Ratio	Quality Index					
2010	5	100	100	10	10	85	100	100	10	10	85	100	100	10	10	85	100	100	10	10	85	100	100	10	10	85					
2011	6	110	110	11	11	86	110	110	11	11	86	110	110	11	11	86	110	110	11	11	86	110	110	11	11	86					
2012	7	120	120	12	12	87	120	120	12	12	87	120	120	12	12	87	120	120	12	12	87	120	120	12	12	87					
2013	8	130	130	13	13	88	130	130	13	13	88	130	130	13	13	88	130	130	13	13	88	130	130	13	13	88					
2014	9	140	140	14	14	89	140	140	14	14	89	140	140	14	14	89	140	140	14	14	89	140	140	14	14	89					
2015	10	150	150	15	15	90	150	150	15	15	90	150	150	15	15	90	150	150	15	15	90	150	150	15	15	90					
2016	11	160	160	16	16	91	160	160	16	16	91	160	160	16	16	91	160	160	16	16	91	160	160	16	16	91					
2017	12	170	170	17	17	92	170	170	17	17	92	170	170	17	17	92	170	170	17	17	92	170	170	17	17	92					
2018	13	180	180	18	18	93	180	180	18	18	93	180	180	18	18	93	180	180	18	18	93	180	180	18	18	93					
2019	14	190	190	19	19	94	190	190	19	19	94	190	190	19	19	94	190	190	19	19	94	190	190	19	19	94					
2020	15	200	200	20	20	95	200	200	20	20	95	200	200	20	20	95	200	200	20	20	95	200	200	20	20	95					
2021	16	210	210	21	21	96	210	210	21	21	96	210	210	21	21	96	210	210	21	21	96	210	210	21	21	96					
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2023	18	230	230	23	23	98	230	230	23	23	98	230	230	23	23	98	230	230	23	23	98	230	230	23	23	98					
2024	19	240	240	24	24	99	240	240	24	24	99	240	240	24	24	99	240	240	24	24	99	240	240	24	24	99					

[illegible][illegible][illegible]

Year	Month	1990s (Decade)												2000s (Decade)												2010s (Decade)												2020s (Decade)												Total	Average																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
1990	Jan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	122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Year	Month	2020-2021 Season					2021-2022 Season										2022-2023 Season										Total	Average
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
2020-2021	1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
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2020-2021	4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
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2020-2021	8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
2020-2021	9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
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2020-2021	56	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
2020-2021	57	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
2020-2021	58	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
2020-2021	59	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
2020-2021	60	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
2020-2021	61	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
2020-2021	62	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
2020-2021	63	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
2020-2021	64	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
2020-2021	65	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
2020-2021	66	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			

Year	2010-2019										2020-2029										2030-2039										2040-2049										2050-2059										2060-2069										2070-2079										2080-2089										2090-2099										2100-2109										2110-2119										2120-2129										2130-2139										2140-2149										2150-2159										2160-2169										2170-2179										2180-2189										2190-2199										2200-2209										2210-2219										2220-2229										2230-2239										2240-2249										2250-2259										2260-2269										2270-2279										2280-2289										2290-2299										2300-2309										2310-2319										2320-2329										2330-2339										2340-2349										2350-2359										2360-2369										2370-2379										2380-2389										2390-2399										2400-2409										2410-2419										2420-2429										2430-2439										2440-2449										2450-2459										2460-2469										2470-2479										2480-2489										2490-2499										2500-2509										2510-2519										2520-2529										2530-2539										2540-2549										2550-2559										2560-2569										2570-2579										2580-2589										2590-2599										2600-2609										2610-2619										2620-2629										2630-2639										2640-2649										2650-2659										2660-2669										2670-2679										2680-2689										2690-2699										2700-2709										2710-2719										2720-2729										2730-2739										2740-2749										2750-2759										2760-2769										2770-2779										2780-2789										2790-2799										2800-2809										2810-2819										2820-2829										2830-2839										2840-2849										2850-2859										2860-2869										2870-2879										2880-2889										2890-2899										2900-2909										2910-2919										2920-2929										2930-2939										2940-2949										2950-2959										2960-2969										2970-2979										2980-2989										2990-2999										3000-3009										3010-3019										3020-3029										3030-3039										3040-3049										3050-3059										3060-3069										3070-3079										3080-3089										3090-3099										3100-3109										3110-3119										3120-3129										3130-3139										3140-3149										3150-3159										3160-3169										3170-3179										3180-3189										3190-3199										3200-3209										3210-3219										3220-3229										3230-3239										3240-3249										3250-3259										3260-3269										3270-3279										3280-3289										3290-3299										3300-3309										3310-3319										3320-3329										3330-3339										3340-3349										3350-3359										3360-3369										3370-3379										3380-3389										3390-3399										3400-3409										3410-3419										3420-3429										3430-3439										3440-3449										3450-3459										3460-3469										3470-3479										3480-3489										3490-3499										3500-3509										3510-3519										3520-3529										3530-3539										3540-3549										3550-3559										3560-3569										3570-3579										3580-3589										3590-3599										3600-3609										3610-3619										3620-3629										3630-3639										3640-3649										3650-3659										3660-3669										3670-3679										3680-3689										3690-3699										3700-3709										3710-3719										3720-3729										3730-3739										3740-3749										3750-3759										3760-3769										3770-3779										3780-3789										3790-3799										3800-3809										3810-3819										3820-3829										3830-3839										3840-3849										3850-3859										3860-3869										3870-3879										3880-3889										3890-3899										3900-3909										3910-3919										3920-3929										3930-3939										3940-3949										3950-3959										3960-3969										3970-3979										3980-3989										3990-3999										4000-4009										4010-4019										4020-4029										4030-4039										4040-4049										4050-4059										4060-4069										4070-4079										4080-4089										4090-4099										4100-4109										4110-4119										4120-4129										4130-4139										4140-4149										4150-4159										4160-4169										4170-4179										4180-4189										4190-4199										4200-4209										4210-4219										4220-4229										4230-4239										4240-4249										4250-4259										4260-4269										4270-4279										4280-4289										4290-4299										4300-4309										4310-4319										4320-4329										4330-4339										4340-4349										4350-4359										4360-4369										4370-4379										4380-4389										4390-4399										4400-4409										4410-4419										4420-4429										4430-4439										4440-4449										4450-4459										4460-4469										4470-4479										4480-4489										4490-4499										4500-4509										4510-4519										4520-4529										4530-4539										4540-4549										4550-4559										4560-4569										4570-4579										4580-4589										4590-4599										4600-4609										4610-4619										4620-4629										4630-4639								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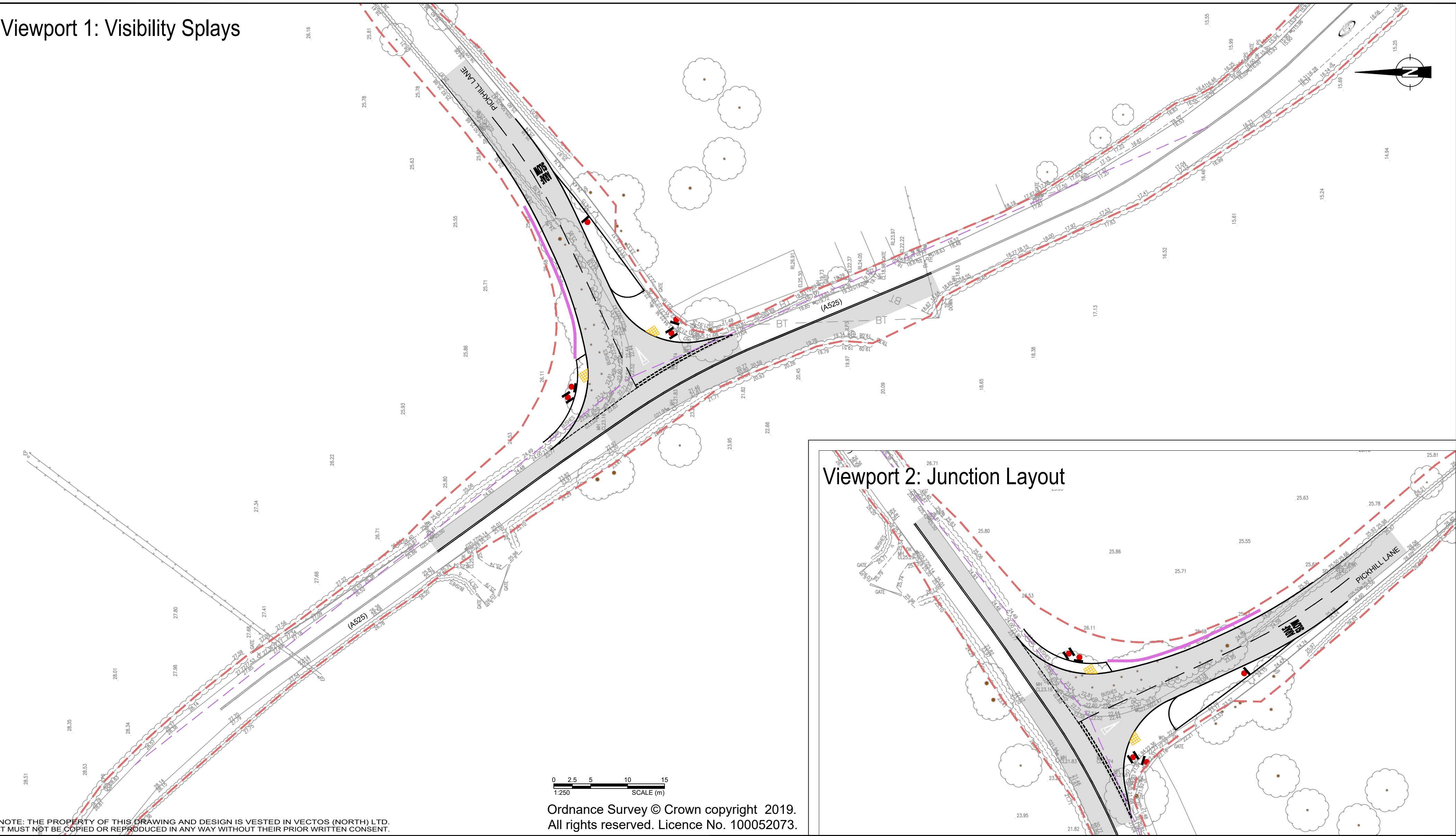
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P001	Project Alpha	2023-01-01	2023-03-15	45	In Progress	2023-03-16	2023-05-01	45	On Hold	2023-05-02	2023-06-15	45	Completed	2023-06-16	2023-07-31	45	On Hold	2023-08-01	2023-09-15	45	Completed	2023-09-16	2023-10-31	45	On Hold	2023-11-01	2023-12-15	45	Completed	2023-12-16	2024-01-31	45	On Hold
P002	Project Beta	2023-02-01	2023-04-15	60	Completed	2023-04-16	2023-06-01	60	On Hold	2023-06-02	2023-07-15	60	Completed	2023-07-16	2023-08-31	60	On Hold	2023-09-01	2023-10-15	60	Completed	2023-10-16	2023-11-30	60	On Hold	2023-12-01	2024-01-15	60	Completed	2024-01-16	2024-02-28	60	On Hold
P003	Project Gamma	2023-03-01	2023-05-15	30	On Hold	2023-05-16	2023-07-01	30	Completed	2023-07-02	2023-08-15	30	On Hold	2023-08-16	2023-09-30	30	Completed	2023-10-01	2023-11-15	30	On Hold	2023-11-16	2024-01-01	30	Completed	2024-01-02	2024-02-15	30	On Hold	2024-02-16	2024-03-31	30	Completed
P004	Project Delta	2023-04-01	2023-06-15	70	Completed	2023-06-16	2023-08-01	70	On Hold	2023-08-02	2023-09-15	70	Completed	2023-09-16	2023-10-31	70	On Hold	2023-11-01	2023-12-15	70	Completed	2023-12-16	2024-01-31	70	On Hold	2024-02-01	2024-03-15	70	Completed	2024-03-16	2024-04-30	70	On Hold
P005	Project Epsilon	2023-05-01	2023-07-15	50	On Hold	2023-07-16	2023-09-01	50	Completed	2023-09-02	2023-10-15	50	On Hold	2023-10-16	2023-11-30	50	Completed	2023-12-01	2024-01-15	50	On Hold	2024-01-16	2024-02-28	50	Completed	2024-03-01	2024-04-15	50	On Hold	2024-04-16	2024-05-31	50	Completed
P006	Project Zeta	2023-06-01	2023-08-15	20	On Hold	2023-08-16	2023-10-01	20	Completed	2023-10-02	2023-11-15	20	On Hold	2023-11-16	2024-01-01	20	Completed	2024-01-02	2024-02-15	20	On Hold	2024-02-16	2024-03-31	20	Completed	2024-04-01	2024-05-15	20	On Hold	2024-05-16	2024-06-30	20	Completed
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P008	Project Theta	2023-08-01	2023-10-15	10	On Hold	2023-10-16	2023-12-01	10	Completed	2023-12-02	2024-01-15	10	On Hold	2024-01-16	2024-02-28	10	Completed	2024-03-01	2024-04-15	10	On Hold	2024-04-16	2024-05-31	10	Completed	2024-06-01	2024-07-15	10	On Hold	2024-07-16	2024-08-31	10	Completed
P009	Project Iota	2023-09-01	2023-11-15	90	Completed	2023-11-16	2024-01-01	90	On Hold	2024-01-02	2024-02-15	90	Completed	2024-02-16	2024-03-31	90	On Hold	2024-04-01	2024-05-15	90	Completed	2024-05-16	2024-06-30	90	On Hold	2024-07-01	2024-08-15	90	Completed	2024-08-16	2024-09-30	90	On Hold
P010	Project Kappa	2023-10-01	2023-12-15	5	On Hold	2023-12-16	2024-01-31	5	Completed	2024-02-01	2024-03-15	5	On Hold	2024-03-16	2024-04-30	5	Completed	2024-05-01	2024-06-15	5	On Hold	2024-06-16	2024-07-31	5	Completed	2024-08-01	2024-09-15	5	On Hold	2024-09-16	2024-10-31	5	Completed
P011	Project Lambda	2023-11-01	2024-01-15	15	On Hold	2024-01-16	2024-02-28	15	Completed	2024-02-29	2024-03-31	15	On Hold	2024-04-01	2024-04-30	15	Completed	2024-05-01	2024-05-31	15	On Hold	2024-06-01	2024-06-30	15	Completed	2024-07-01	2024-07-31	15	On Hold	2024-08-01	2024-08-31	15	Completed
P012	Project Mu	2023-12-01	2024-02-15	40	On Hold	2024-02-16	2024-03-31	40	Completed	2024-04-01	2024-04-30	40	On Hold	2024-05-01	2024-05-31	40	Completed	2024-06-01	2024-06-30	40	On Hold	2024-07-01	2024-07-31	40	Completed	2024-08-01	2024-08-31	40	On Hold	2024-09-01	2024-09-30	40	Completed
P013	Project Nu	2024-01-01	2024-03-15	25	On Hold	2024-03-16	2024-04-30	25	Completed	2024-05-01	2024-05-31	25	On Hold	2024-06-01	2024-06-30	25	Completed	2024-07-01	2024-07-31	25	On Hold	2024-08-01	2024-08-31	25	Completed	2024-09-01	2024-09-30	25	On Hold	2024-10-01	2024-10-31	25	Completed
P014	Project Xi	2024-02-01	2024-04-15	18	On Hold	2024-04-16	2024-05-31	18	Completed	2024-06-01	2024-06-30	18	On Hold	2024-07-01	2024-07-31	18	Completed	2024-08-01	2024-08-31	18	On Hold	2024-09-01	2024-09-30	18	Completed	2024-10-01	2024-10-31	18	On Hold	2024-11-01	2024-11-30	18	Completed
P015	Project Omicron	2024-03-01	2024-05-15	12	On Hold	2024-05-16	2024-06-30	12	Completed	2024-07-01	2024-07-31	12	On Hold	2024-08-01	2024-08-31	12	Completed	2024-09-01	2024-09-30	12	On Hold	2024-10-01	2024-10-31	12	Completed	2024-11-01	2024-11-30	12	On Hold	2024-12-01	2024-12-31	12	Completed
P016	Project Pi	2024-04-01	2024-06-15	7	On Hold	2024-06-16	2024-07-31	7	Completed	2024-08-01	2024-08-31	7	On Hold	2024-09-01	2024-09-30	7	Completed	2024-10-01	2024-10-31	7	On Hold	2024-11-01	2024-11-30	7	Completed	2024-12-01	2024-12-31	7	On Hold	2025-01-01	2025-01-31	7	Completed
P017	Project Rho	2024-05-01	2024-07-15	3	On Hold	2024-07-16	2024-08-31	3	Completed	2024-09-01	2024-09-30	3	On Hold	2024-10-01	2024-10-31	3	Completed	2024-11-01	2024-11-30	3	On Hold	2024-12-01	2024-12-31	3	Completed	2025-01-01	2025-01-31	3	On Hold	2025-02-01	2025-02-28	3	Completed
P018	Project Sigma	2024-06-01	2024-08-15	1	On Hold	2024-08-16	2024-09-30	1	Completed	2024-10-01	2024-10-31	1	On Hold	2024-11-01	2024-11-30	1	Completed	2024-12-01	2024-12-31	1	On Hold	2025-01-01	2025-01-31	1	Completed	2025-02-01	2025-02-28	1	On Hold	2025-03-01	2025-03-31	1	Completed
P019	Project Tau	2024-07-01	2024-09-15	0	On Hold	2024-09-16	2024-10-31	0	Completed	2024-11-01	2024-11-30	0	On Hold	2024-12-01	2024-12-31	0	Completed	2025-01-01	2025-01-31	0	On Hold	2025-02-01	2025-02-28	0	Completed	2025-03-01	2025-03-31	0	On Hold	2025-04-01	2025-04-30	0	Completed
P020	Project Upsilon	2024-08-01	2024-10-15	0	On Hold	2024-10-16	2024-11-30	0	Completed	2024-12-01	2024-12-31	0	On Hold	2025-01-01	2025-01-31	0	Completed	2025-02-01	2025-02-28	0	On Hold	2025-03-01	2025-03-31	0	Completed	2025-04-01	2025-04-30	0	On Hold	2025-05-01	2025-05-31	0	Completed
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P022	Project Chi	2024-10-01	2024-12-15	0	On Hold	2024-12-16	2025-02-01	0	Completed	2025-02-02	2025-02-28	0	On Hold	2025-03-01	2025-03-31	0	Completed	2025-04-01	2025-04-30	0	On Hold	2025-05-01	2025-05-31	0	Completed	2025-06-01	2025-06-30	0	On Hold	2025-07-01	2025-07-31	0	Completed
P023	Project Psi	2024-11-01	2025-01-15	0	On Hold	2025-01-16	2025-03-01	0	Completed	2025-03-02	2025-03-31	0	On Hold	2025-04-01	2025-04-30	0	Completed	2025-05-01	2025-05-31	0	On Hold	2025-06-01	2025-06-30	0	Completed	2025-07-01	2025-07-31	0	On Hold	2025-08-01	2025-08-31	0	Completed
P024	Project Omega	2024-12-01	2025-02-15	0	On Hold	2025-02-16	2025-04-01	0	Completed	2025-04-02	2025-04-30	0	On Hold	2025-05-01	2025-05-31	0	Completed	2025-06-01	2025-06-30	0	On Hold	2025-07-01	2025-07-31	0	Completed	2025-08-01	2025-08-31	0	On Hold	2025-09-01	2025-09-30	0	Completed
P025	Project A	2025-01-01	2025-03-15	0	On Hold	2025-03-16	2025-05-01	0	Completed	2025-05-02	2025-05-31	0	On Hold	2025-06-01	2025-06-30	0	Completed	2025-07-01	2025-07-31	0	On Hold	2025-08-01	2025-08-31	0	Completed	2025-09-01	2025-09-30	0	On Hold	2025-10-01	2025-10-31	0	Completed
P026	Project B	2025-02-01	2025-04-15	0	On Hold	2025-04-16	2025-06-01	0	Completed	2025-06-02	2025-06-30	0	On Hold	2025-07-01	2025-07-31	0	Completed	2025-08-01	2025-08-31	0	On Hold	2025-09-01	2025-09-30	0	Completed	2025-10-01	2025-10-31	0	On Hold	2025-11-01	2025-11-30	0	Completed
P027	Project C	2025-03-01	2025-05-15	0	On Hold	2025-05-16	2025-07-01	0	Completed	2025-07-02	2025-07-31	0	On Hold	2025-08-01	2025-08-31	0	Completed	2025-09-01	2025-09-30	0	On Hold	2025-10-01	2025-10-31	0	Completed	2025-11-01	2025-11-30	0	On Hold	2025-12-01	2025-12-31	0	Completed
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P029	Project E	2025-05-01	2025-07-15	0	On Hold	2025-07-16	2025-09-01	0	Completed	2025-09-02	2025-09-30	0	On Hold	2025-10-01	2025-10-31	0	Completed	2025-11-01	2025-11-30	0	On Hold	2025-12-01	2025-12-31	0	Completed	2026-01-01	2026-01-31	0	On Hold	2026-02-01	2026-02-28	0	Completed
P030	Project F	2025-06-01	2025-08-15	0	On Hold	2025-08-16	2025-10-01	0	Completed	2025-10-02	2025-10-31	0	On Hold	2025-11-01	2025-11-30	0	Completed	2025-12-01	2025-12-31	0	On Hold	2026-01-01	2026-01-31	0	Completed	2026-02-01	2026-02-28	0	On Hold	2026-03-01	2026-03-31	0	Completed
P031	Project G	2025-07-01	2025-09-15	0	On Hold	2025-09-16	2025-11-01	0	Completed	2025-11-02	2025-11-30	0	On Hold	2025-12-01	2025-12-31	0	Completed	2026-01-01	2026-01-31	0	On Hold	2026-02-01	2026-02-28	0	Completed	2026-03-01	2026-03-31	0	On Hold	2026-04-01	2026-04-30	0	Completed
P032	Project H	2025-08-01	2025-10-15	0	On Hold	2025-10-16	2025-12-01	0	Completed	2025-12-02	2025-12-31	0	On Hold	2026-01-01	2026-01-31	0	Completed	2026-02-01	2026-02-28	0	On Hold	2026-03-01	2026-03-31	0	Completed	2026-04-01	2026-04-30	0	On Hold	2026-05-01	2026-05-31	0	Completed
P033	Project I	2025-09-01	2025-11-15	0	On Hold	2025-11-16	2026-01-01	0	Completed	2026-01-02	2026-01-31	0	On Hold	2026-02-01	2026-02-28	0	Completed	2026-03-01	2026-03-31	0	On Hold	2026-04-01	2026-04-30	0	Completed	2026-05-01	2026-05-31	0	On Hold	2026-06-01	2026-06-30	0	Completed
P034	Project J	2025-10-01	2025-12-15	0	On Hold	2025-12-16	2026-02-01	0																									

Year	Production (Million Tons)					Export (Million Tons)										Import (Million Tons)										Total (Million Tons)	Growth (%)	Notes
	Wheat	Rice	Corn	Soybean	Others	USA	China	India	Japan	EU	Others	USA	China	India	Japan	EU	Others	USA	China	India	Japan	EU	Others					
2010	1.2	0.8	1.5	0.3	0.2	0.5	0.4	0.3	0.2	0.1	0.0	0.6	0.5	0.4	0.3	0.2	0.1	0.7	0.6	0.5	0.4	0.3	0.2	0.1	1.5	5.2	Stable	
2011	1.3	0.9	1.6	0.3	0.2	0.5	0.4	0.3	0.2	0.1	0.0	0.6	0.5	0.4	0.3	0.2	0.1	0.7	0.6	0.5	0.4	0.3	0.2	0.1	1.6	6.7	Stable	
2012	1.4	1.0	1.7	0.3	0.2	0.6	0.4	0.3	0.2	0.1	0.0	0.7	0.6	0.5	0.4	0.3	0.2	0.8	0.7	0.6	0.5	0.4	0.3	0.2	1.7	8.3	Stable	
2013	1.5	1.1	1.8	0.3	0.2	0.7	0.4	0.3	0.2	0.1	0.0	0.8	0.7	0.6	0.5	0.4	0.3	0.9	0.8	0.7	0.6	0.5	0.4	0.3	1.8	10.0	Stable	
2014	1.6	1.2	1.9	0.3	0.2	0.8	0.4	0.3	0.2	0.1	0.0	0.9	0.8	0.7	0.6	0.5	0.4	1.0	0.9	0.8	0.7	0.6	0.5	0.4	1.9	11.7	Stable	
2015	1.7	1.3	2.0	0.3	0.2	0.9	0.4	0.3	0.2	0.1	0.0	1.0	0.9	0.8	0.7	0.6	0.5	1.1	1.0	0.9	0.8	0.7	0.6	0.5	2.0	13.3	Stable	
2016	1.8	1.4	2.1	0.3	0.2	1.0	0.4	0.3	0.2	0.1	0.0	1.1	1.0	0.9	0.8	0.7	0.6	1.2	1.1	1.0	0.9	0.8	0.7	0.6	2.1	15.0	Stable	
2017	1.9	1.5	2.2	0.3	0.2	1.1	0.4	0.3	0.2	0.1	0.0	1.2	1.1	1.0	0.9	0.8	0.7	1.3	1.2	1.1	1.0	0.9	0.8	0.7	2.2	16.7	Stable	
2018	2.0	1.6	2.3	0.3	0.2	1.2	0.4	0.3	0.2	0.1	0.0	1.3	1.2	1.1	1.0	0.9	0.8	1.4	1.3	1.2	1.1	1.0	0.9	0.8	2.3	18.3	Stable	
2019	2.1	1.7	2.4	0.3	0.2	1.3	0.4	0.3	0.2	0.1	0.0	1.4	1.3	1.2	1.1	1.0	0.9	1.5	1.4	1.3	1.2	1.1	1.0	0.9	2.4	20.0	Stable	
2020	2.2	1.8	2.5	0.3	0.2	1.4	0.4	0.3	0.2	0.1	0.0	1.5	1.4	1.3	1.2	1.1	1.0	1.6	1.5	1.4	1.3	1.2	1.1	1.0	2.5	21.7	Stable	
2021	2.3	1.9	2.6	0.3	0.2	1.5	0.4	0.3	0.2	0.1	0.0	1.6	1.5	1.4	1.3	1.2	1.1	1.7	1.6	1.5	1.4	1.3	1.2	1.1	2.6	23.3	Stable	
2022	2.4	2.0	2.7	0.3	0.2	1.6	0.4	0.3	0.2	0.1	0.0	1.7	1.6	1.5	1.4	1.3	1.2	1.8	1.7	1.6	1.5	1.4	1.3	1.2	2.7	25.0	Stable	
2023	2.5	2.1	2.8	0.3	0.2	1.7	0.4	0.3	0.2	0.1	0.0	1.8	1.7	1.6	1.5	1.4	1.3	1.9	1.8	1.7	1.6	1.5	1.4	1.3	2.8	26.7	Stable	
2024	2.6	2.2	2.9	0.3	0.2	1.8	0.4	0.3	0.2	0.1	0.0	1.9	1.8	1.7	1.6	1.5	1.4	2.0	1.9	1.8	1.7	1.6	1.5	1.4	2.9	28.3	Stable	
2025	2.7	2.3	3.0	0.3	0.2	1.9	0.4	0.3	0.2	0.1	0.0	2.0	1.9	1.8	1.7	1.6	1.5	2.1	2.0	1.9	1.8	1.7	1.6	1.5	3.0	30.0	Stable	
2026	2.8	2.4	3.1	0.3	0.2	2.0	0.4	0.3	0.2	0.1	0.0	2.1	2.0	1.9	1.8	1.7	1.6	2.2	2.1	2.0	1.9	1.8	1.7	1.6	3.1	31.7	Stable	
2027	2.9	2.5	3.2	0.3	0.2	2.1	0.4	0.3	0.2	0.1	0.0	2.2	2.1	2.0	1.9	1.8	1.7	2.3	2.2	2.1	2.0	1.9	1.8	1.7	3.2	33.3	Stable	
2028	3.0	2.6	3.3	0.3	0.2	2.2	0.4	0.3	0.2	0.1	0.0	2.3	2.2	2.1	2.0	1.9	1.8	2.4	2.3	2.2	2.1	2.0	1.9	1.8	3.3	35.0	Stable	
2029	3.1	2.7	3.4	0.3	0.2	2.3	0.4	0.3	0.2	0.1	0.0	2.4	2.3	2.2	2.1	2.0	1.9	2.5	2.4	2.3	2.2	2.1	2.0	1.9	3.4	36.7	Stable	
2030	3.2	2.8	3.5	0.3	0.2	2.4	0.4	0.3	0.2	0.1	0.0	2.5	2.4	2.3	2.2	2.1	2.0	2.6	2.5	2.4	2.3	2.2	2.1	2.0	3.5	38.3	Stable	

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Appendix D – Proposed Alternative A525 / Pickhill Lane Junction Design

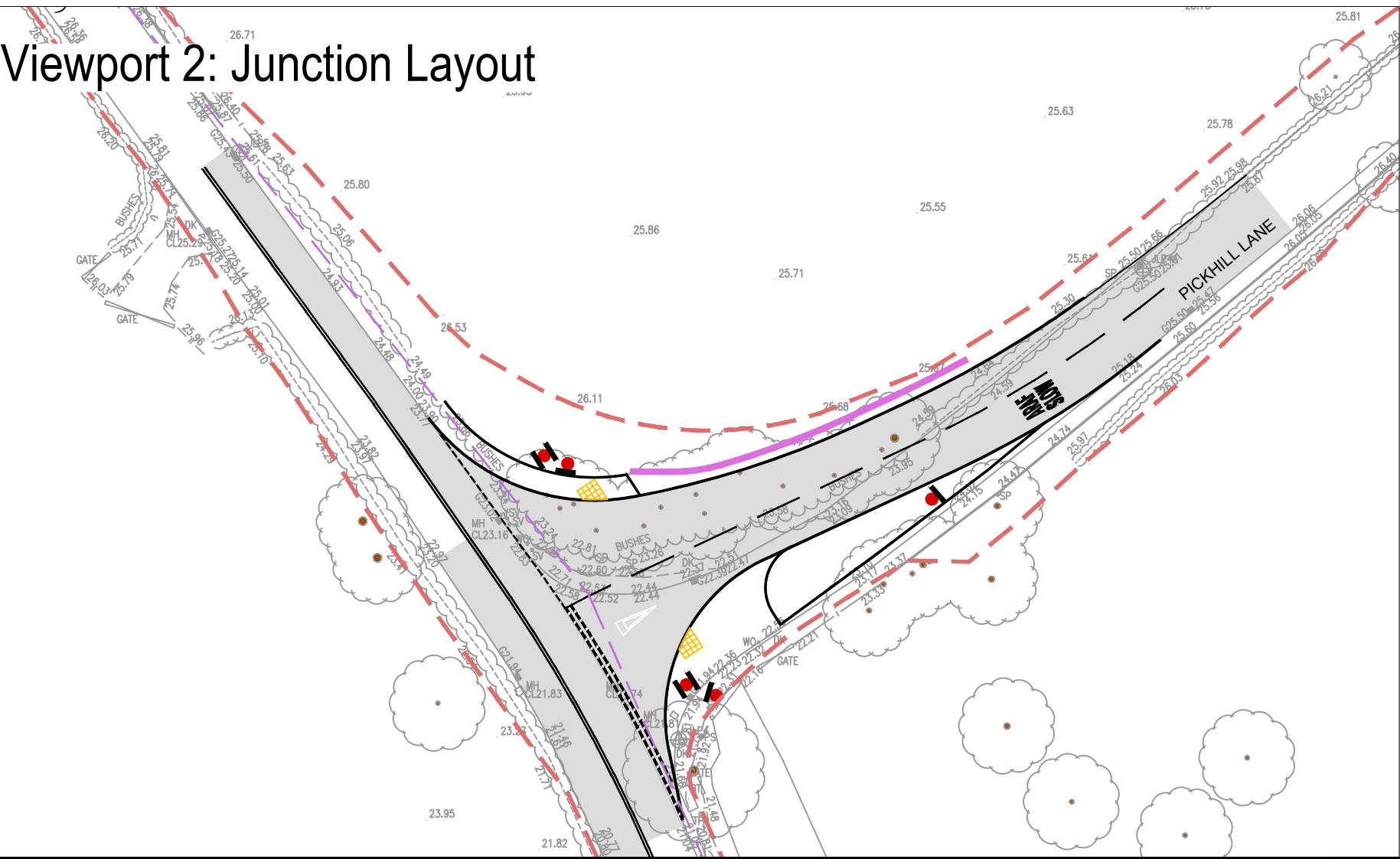
Viewport 1: Visibility Splays



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Viewport 2: Junction Layout



REV.	DETAILS	DRAWN	CHECKED	DATE
1				

Notes:

- 1. This is not a construction drawing and is intended for illustrative purposes only.
- 2. White lining is indicative only.

--- 2.4m x 120m Visibility Splay

--- Extent of Adopted Highway

--- Retaining Wall Structure

Maelor Foods Further Development

A525/Pickhill Lane General Arrangement

DRAWN: JC

CHECKED: MR

DATE: 07.07.22

SCALES: 1:500 at A2

Maelor Foods

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4th Floor Oxford Place, 61 Oxford Street, Manchester, M1 6EQ
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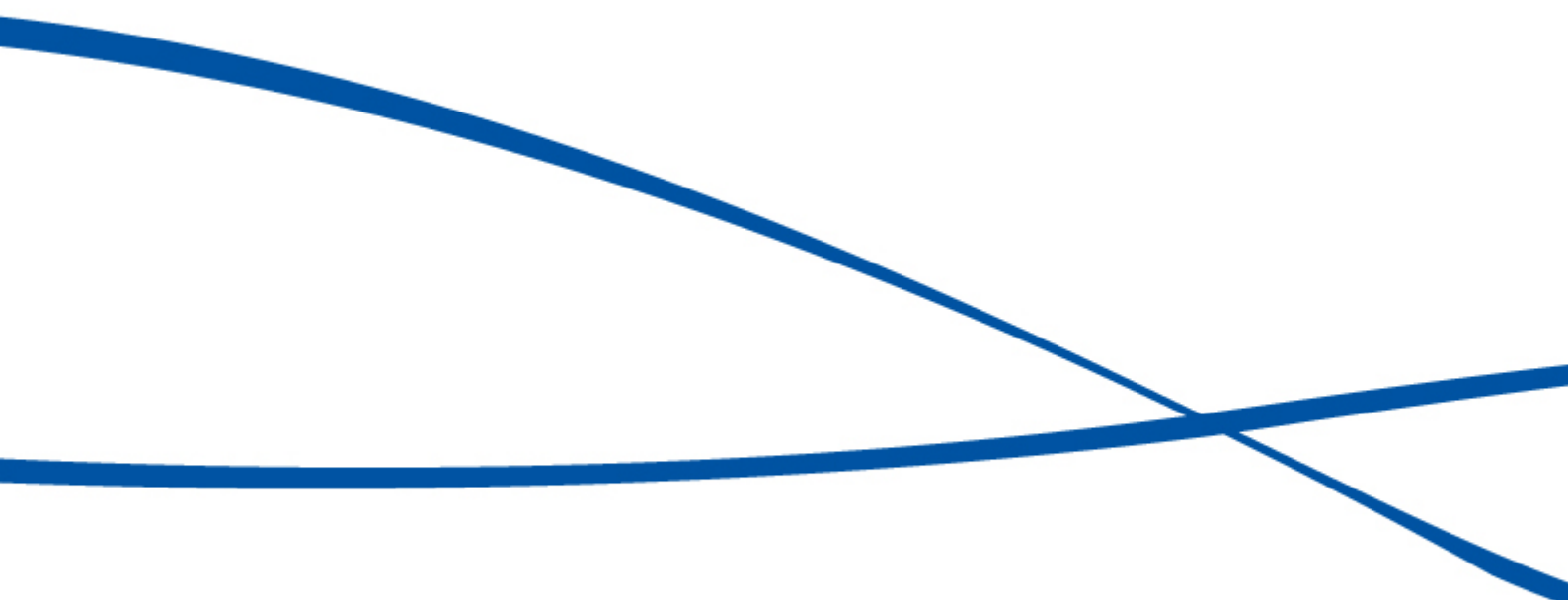
DRAWING NUMBER: VN222301 D102

REVISION: .

Appendix E – Maelor Foods Travel Plan

Maelor Foods Ltd

MAELOR FOODS, PICKHILL LANE



Travel Plan

VN70805

March 2019

REPORT CONTROL

Document: Travel Plan

Project: Maelor Foods, Pickhill Lane

Client: Maelor Foods Ltd

Job Number: VN70805

File Origin: N:\Vectos Job Data\2017\VN70805 Maelor Foods, Pickhill Lane\Docs\Reports\Travel Plan - Feb 2019

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3	March 2019	TP_01b	PW
4			

CONTENTS

1	INTRODUCTION	3
1.1	Background	3
1.2	Purpose of the Travel Plan	3
2	EXISTING CONDITIONS	5
2.1	Site Location	5
2.2	Local Highway Network.....	5
2.3	Site Operation	7
3	TRAVEL PLANNING POLICY AND BEST PRACTICE	9
3.1	Planning Policy Wales (2018).....	9
3.2	Technical Advice Note 18 (2007).....	9
3.3	Wrexham UDP (2005) and Emerging Local Development Plan (2018).....	9
3.4	North Wales Joint Local Transport Plan (2015).....	10
3.5	Wrexham Connected (2016).....	10
4	ACCESSIBILITY BY SUSTAINABLE MODES OF TRAVEL	12
4.2	Accessibility on Foot	12
4.3	Accessibility by Cycle	14
4.4	Accessibility by Bus	16
4.5	Accessibility by Rail.....	16
5	BASELINE MODE SPLIT AND FUTURE TRAVEL SURVEYS	17
5.1	Mode Split	17
5.2	Future Travel Surveys.....	18
6	OBJECTIVES AND TARGETS.....	19
6.1	Objectives	19
6.2	Targets	19
7	TRAVEL PLAN MEASURES.....	22
7.1	Measures to Achieve Objective 1.....	22
7.2	Measures to Achieve Objective 2.....	24
7.3	Measures to Achieve Objective 3.....	25
7.4	Measures to Achieve Objective 4.....	27
8	ACTION PLAN	29

9	MANAGEMENT STRATEGY	33
9.1	Travel Plan Coordinator	33
9.2	Marketing Strategy	33
9.3	Monitoring and Progress Reports	34
9.4	Updating the Action Plan	34
9.5	Ensuring Additional Issues are Investigated	34
9.6	Liaising with WCBC	35
10	SUMMARY	36

1 INTRODUCTION

1.1 Background

1.1.1 Vectos has been commissioned by Maelor Foods to provide a Travel Plan for their poultry processing facility located on Pickhill Lane near Wrexham.

1.1.2 The site has operated as an employment site (i.e. creamery, cheese making and packing) for over 70 years. In March 2015, it received planning permission (Ref: P/2014/0781) from Wrexham County Borough Council (WCBC) for the change of use from a cheese cutting and packing facility to a poultry processing facility. The application was supported by a Transport Statement, which also provided a Framework Travel Plan to enable the site to actively promote sustainable travel modes.

1.1.3 Since the planning permission, Maelor Foods have been investigating a variety of travel planning measures including analysis of traffic data on the local network, review of staff parking arrangements, production of a service management plan and implementation of a driver charter.

1.1.4 This document builds upon the initial travel planning investigations conducted by Maelor Foods and provides a formal Travel Plan document that references the previously approved framework. It provides an up to date review of the site location and options for sustainable travel whilst including details on how the plan will be administrated, appropriate sustainable travel initiatives for the site, targets for future modal shift and a strategy to monitor the plan.

1.2 Purpose of the Travel Plan

1.2.1 A Travel Plan can be thought of as a pyramid of measures. The plan is built from the bottom up, with decisions and actions at each level creating the conditions that provide the foundation for success at the next level up. A diagrammatical explanation of this is provided in **Figure 1.2**.

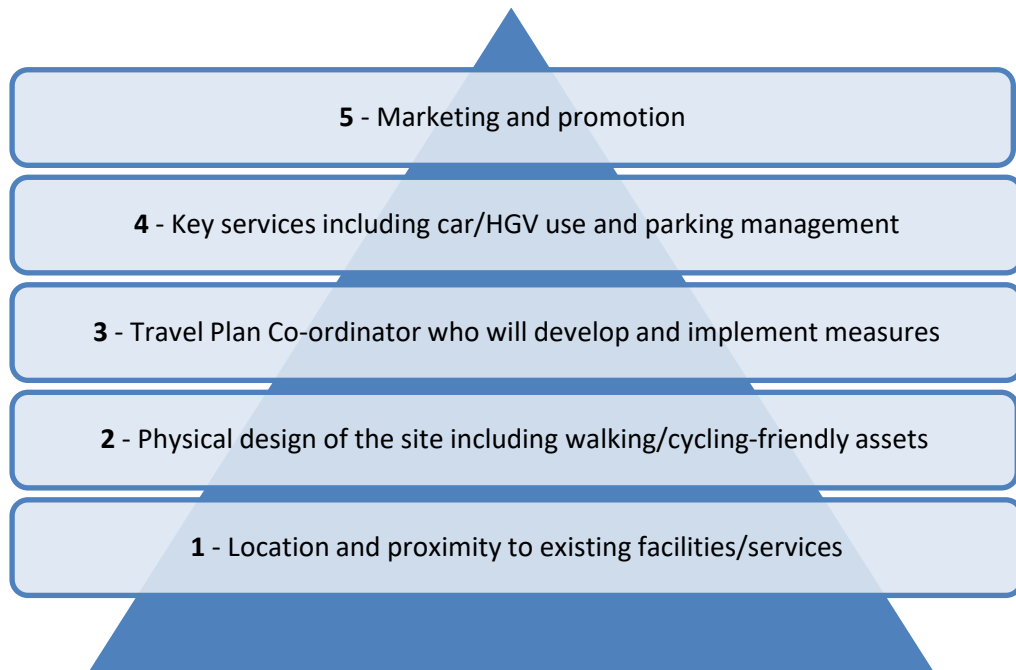


Figure 1.2: Travel Plan Pyramid

- 1.2.2 A Travel Plan addresses all types of trips to and from the development. It sets out the implementation, marketing, monitoring and a variety of travel measures to meet pre-agreed travel targets which are then reviewed on a regular basis. They also offer many benefits such as increasing safety and creating healthier working environments.
- 1.2.3 The travel planning process should be site-specific, taking into account the characteristics of the site such as its location, surrounding transport infrastructure and the nature of its operation. It should also be a flexible document which can and will be adapted to suit changes in the site's characteristics over time.
- 1.2.4 This Travel Plan document provides a strategy to reduce the potential traffic impacts on the local environment, improve the management of transport to and from the site and promote sustainable travel modes where possible. Specifically, it will include measures focussed on:
- Encouraging the use of more sustainable travel choices amongst staff;
 - Reducing the overall need for travel to the site amongst staff; and
 - Managing the site's Heavy Goods Vehicles (HGV) movements.

2 EXISTING CONDITIONS

2.1 Site Location

2.1.1 The site is located between the villages of Cross Lanes and Bangor Is-Y-Coed, and is accessed directly from Pickhill Lane. The site is bound on all sides by agricultural land, with a small number of residential dwellings opposite the site. The location of the site is presented in **Figure 2.1**.

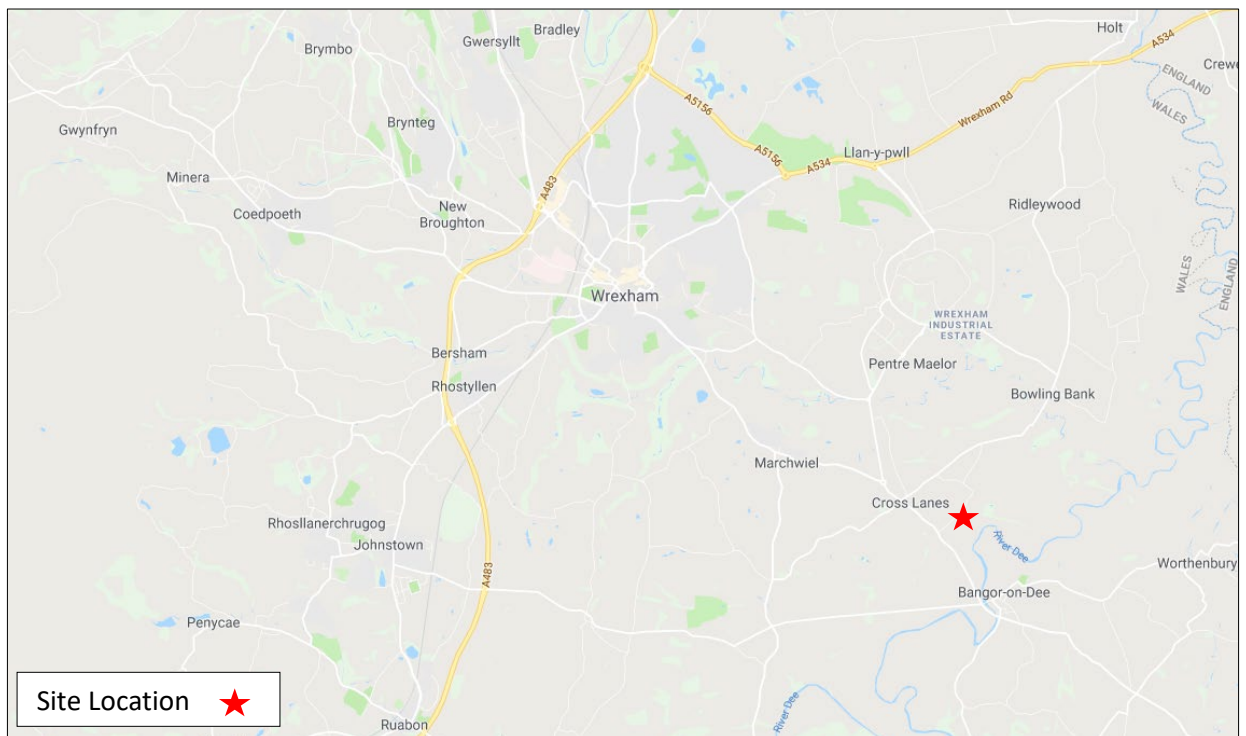


Figure 2.1: Location of the Maelor Foods site (Wider Context)

2.2 Local Highway Network

Pickhill Lane

2.2.1 The site is accessed from Pickhill Lane via the A525 which is a key link into Wrexham whilst also providing access to the wider network.

2.2.2 Pickhill Lane is a single carriageway road, which is wide enough for two heavy goods vehicles to pass. The lane is subject to national speed limits and there is a footway along the southern edge of the road as far as the western edge of the site, which links to a footway on the A525. It is noted that these are not lit. No footways are provided to the east of the site along Pickhill Lane. There are however footpaths across local fields from both Cross Lanes and Bangor Is-Y-Coed.

2.2.3 Data has been collected to investigate the use of Pickhill Lane not only in the peak hours, but throughout the day. The ATC data for Pickhill Lane is presented in **Figure 2.2** and **Figure 2.3** for the weekday and weekends respectively.

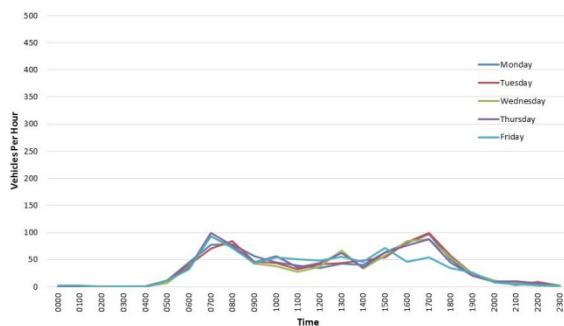


Figure 2.2: Pickhill Lane Weekday Two-Way Flows

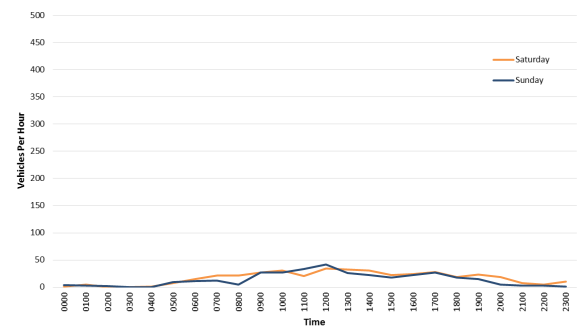


Figure 2.3: Pickhill Lane Weekend Two-Way Flows

2.2.4 Analysis of the most recent survey conducted in September 2017 shows that the average two-way flows on Pickhill Lane are 87 and 85 in the morning and evening peak hours. The flows are considered to be very low in the peak hours equivalent to 1-2 vehicles per minute. During the inter-peak, the two-way flows on Pickhill Lane decrease to an average of 47 vehicles per hour, equivalent to approximately 1 vehicle per minute.

A525

2.2.5 The A525/Pickhill Lane junction is a 3-arm priority arrangement, with the latter road forming the side arm. There is no lighting at this junction, or along the A525 and Pickhill Lane. The A525 is a single carriageway road which provides a local link between Wrexham and Whitchurch. It also continues northwards towards Rhyl and east to Newcastle-under-Lyme.

2.2.6 The road is subject to national speed limit with reductions to 40mph in parts to assist in managing vehicle movements. Mobile speed cameras are known to operate along the A525. There is a footway on the eastern side of the road, from Cross Lanes village to Pickhill Lane. A footway is also provided along the eastern edge of the A525 towards Bangor Is-Y-Coed.

2.2.7 An ATC was arranged for the A525, south of the Pickhill Lane junction, to record the volume of traffic throughout the day over a seven-day period. The ATC data for the A525 is presented in **Figure 2.4** and **Figure 2.5** for the weekday and weekends respectively.

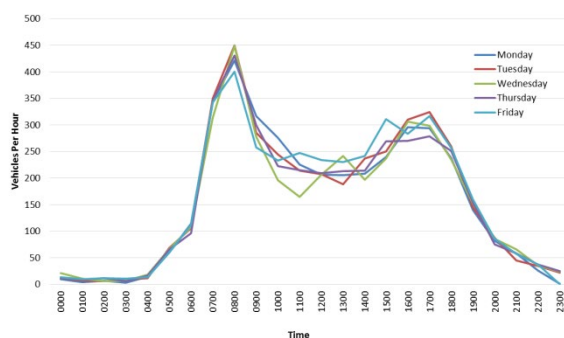


Figure 2.4: A525 Weekday Two-Way Flows

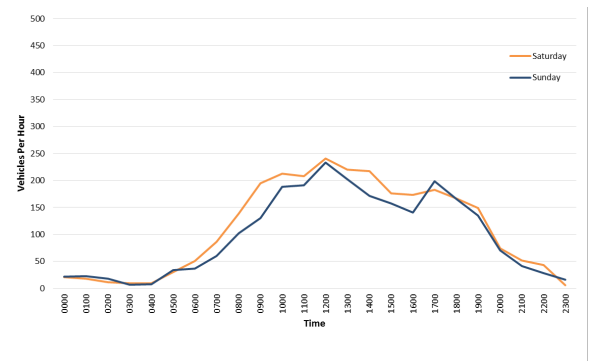


Figure 2.5: A525 Weekend Two-Way Flows

2.2.8 The peak in activity is associated with the typical morning and evening commuter periods (i.e. 0800-0900hrs and 1700-1800hrs). During the inter-peak period, two-way traffic flows reduce to approximately 200-250 vehicles per hour, equivalent to 3-4 vehicles per minute, between 0900-1500hrs.

2.2.9 At the weekend, the flows on both a Saturday and Sunday are similar with a peak around the middle of the day. It is noted that the peak flows on the A525 on a weekend are approximately 50% lower than the peak flows experienced on the A525 in the morning peak.

2.3 Site Operation

2.3.1 The site employs in the region of 150 staff. The majority work in two key shift patterns between 0600-1800hrs and 1800-0600hrs. This provides a 24hrs operation of the site. Within the 150 staff, a small number work during 'typical' office hours of 0900-1700hrs.

2.3.2 There are 150 spaces provided within the site, accessed from Pickhill Lane. Not all staff are present on site at the same time and the peak parking demand is associated with shift change over times. For the majority of the day the car park has space available.

2.3.3 The main site access for HGVs is also on Pickhill Lane. The site provides a circulatory system for large delivery vehicles. Signage is provided within the site directing vehicles to the relevant areas. Deliveries to the site occur daily, with dedicated vehicles arriving full and leaving empty. There are also vehicles taking the final processed products from the site to service existing markets. Again, these vehicles arrive empty and leave full. Deliveries of produce and collection of final processed products occur in separate areas within the site.

3 TRAVEL PLANNING POLICY AND BEST PRACTICE

3.1 Planning Policy Wales (2018)

- 3.1.1 Chapter 8 of Planning Policy Wales concerns Transport and sets out the Welsh Government's transport policies, with an overarching aim of, *"encouraging a more effective and efficient transport system, with greater use of the more sustainable and healthy forms of travel, and minimising the need to travel."* It is considered that a Travel Plan can be a tool used to do so. Chapter 4 of this document surrounds 'active places' and states that Technical Advice Note (TAN) 18 is to be used as a basis for the preparation of Travel Plans.

3.2 Technical Advice Note 18 (2007)

- 3.2.1 This document describes how travel planning should be assessed and mitigated. TAN 18 highlights that local authorities should seek to maximise relative accessibility rather than ensuring everyone can travel everywhere. In this instance accessibility refers to the relative ability to take up services, markets or facilities. The Welsh Government argues that focusing on accessibility is important in addressing social exclusion and for maximising choice in services, employment and recreation opportunities.
- 3.2.2 Contained within Chapter 9 is guidance on the submission of a Travel Plan. It is stated that developers may voluntarily submit a Travel Plan with a planning application, for example to illustrate existing promotion of sustainable travel activity at the site.
- 3.2.3 It is also stated that the Assembly Government wishes to promote the widespread adoption of Travel Plans by businesses and that Travel Plans should relate to targets for the reduction of road traffic and the promotion of walking, cycling and public transport.

3.3 Wrexham UDP (2005) and Emerging Local Development Plan (2018)

- 3.3.1 At the heart of both the existing Wrexham UDP and the emerging Local Development Plan is a strategy promoting sustainable development and accessible locations where adequate access to a range of travel modes exists.

3.3.2 A range of development principles are outlined which seek to ensure that safe and convenient pedestrian and vehicular access can be provided to and from sites whilst ensuring that development is located where it has convenient access to public transport facilities, and is well related to pedestrian and cycle routes where possible.

3.3.3 The emerging Local Development Plan specifically highlights the importance of a Travel Plan in that it is a package of measures to encourage safe, healthy and sustainable travel options. By reducing car travel, Travel Plans can improve health and wellbeing, free up car parking space, and make a positive contribution to the community and the environment.

3.4 North Wales Joint Local Transport Plan (2015)

3.4.1 The North Wales Local Joint Local Transport Plan was jointly produced by the six North Wales Local Authorities of Conwy County Borough Council, Denbighshire County Council, Flintshire County Council, Gwynedd Council, Isle of Anglesey County Council and importantly Wrexham County Borough Council.

3.4.2 The document states that the vision for transport in North Wales is to *“aim to remove barriers to economic growth, prosperity and well-being by delivering safe, sustainable, affordable and effective transport networks.”* A Travel Plan can help achieve this vision and the Joint Local Transport Plan’s desired outcomes which are listed below:

- Increasing levels of walking and cycling;
- Improved safety and security of both actual and perceived safety of travel by all modes;
- Minimise impacts on the environment;
- Support for economic growth through an improvement in the efficiency, reliability, resilience, and connectivity of movement;
- Providing inclusive and affordable access to employment and training; and
- Promotion of social inclusion.

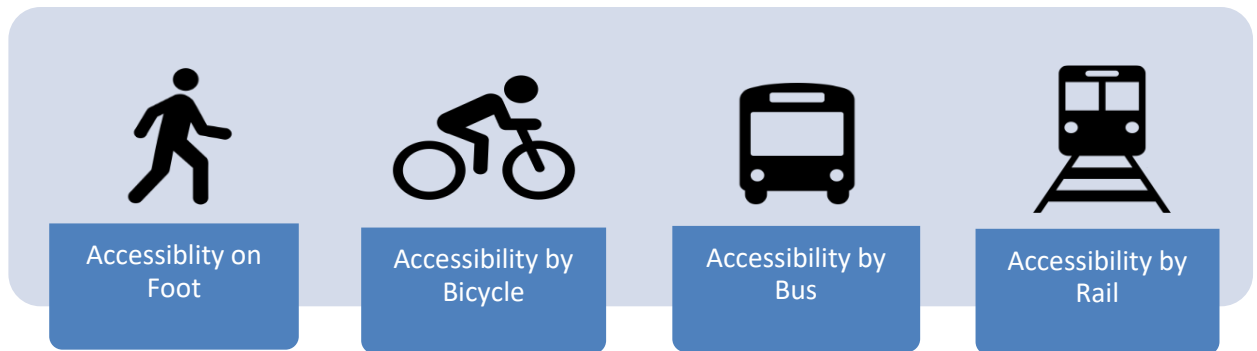
3.5 Wrexham Connected (2016)

3.5.1 Wrexham Connected sets a clear vision for the future of transport. It brings together, in one place, the Council’s overall direction for transport planning, creating real choices in how people and goods move around and finding new ways of funding infrastructure.

- 3.5.2 A key theme within the document is the Wrexham Travel Decision Tree that first questions whether a journey needs to be made at all. It then gets users to question whether the journey can be completed more easily by taking a different route, travelling at a different time or by choosing a different travel mode.
- 3.5.3 This is in keeping with other travel planning tools and ultimately seeks to promote places that are safer, more sustainable and healthier whilst facilitating connections to employment, retail and leisure facilities.

4 ACCESSIBILITY BY SUSTAINABLE MODES OF TRAVEL

4.1.1 Planning Policy Wales stresses the importance of locating developments where the need for travel will be minimised and the use of sustainable transport modes can be maximised. In this regard the accessibility of the Maelor Foods site by the following modes of travel has been considered.



4.2 Accessibility on Foot

4.2.1 The Chartered Institution of Highways and Transportation document '*Providing for Journeys on Foot*' (2000) provides guidance on what are considered to be acceptable walking distances. It states that acceptable walking distances for pedestrians without mobility impairment are up to 1km with 2km being the preferred maximum.

4.2.2 The site is located 1.3km south-east of a settlement adjacent to Cross Lanes and 1.7km north of the larger settlement of Bangor-on-Dee. The pedestrian catchment for 2km is shown in **Figure 4.1** below which illustrates the areas that can be reached.

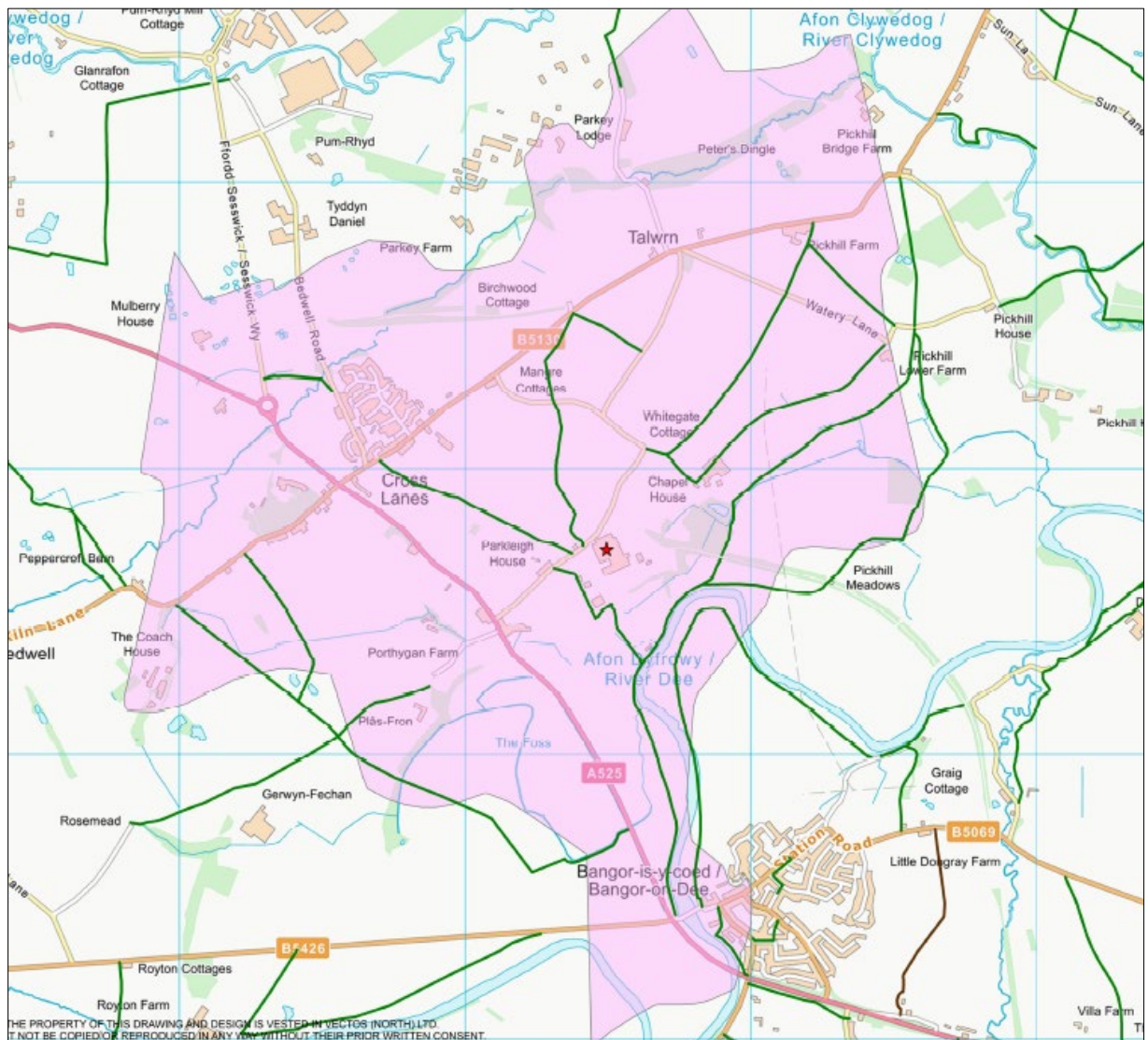


Figure 4.1: 2km Pedestrian Catchment

- 4.2.3 Based on the above, the site is situated within walking distance from the residential areas of Bedwell Crescent, Hunters Meadow and Meadowcroft within Cross Lanes. Overton Road, High Street and Whitchurch Road in Bangor Is-Y-Coed are located within the 2km walking distance of the site.
- 4.2.4 To facilitate connectivity, a footpath is provided along the southern side of Pickhill Lane which provides a link to the footpath which runs along the eastern side of the A525, as shown in **Figure 4.2**. Such provision can be used when walking to the site from the aforementioned settlements.



Figure 4.2: Footway on Pickhill Lane



Figure 4.3: Footway on A525

4.3 Accessibility by Cycle

- 4.3.1 Cycling is becoming an increasingly popular mode of transport and is an effective mode for short trips. The DfT's Local Transport Note 2/08 '*Cycle Infrastructure Design*' (2008) states that many utility cycle journeys are under 3 miles, although for commuters a trip distance of over 5 miles is not uncommon.
- 4.3.2 Cycling has the potential to replace short car journeys, particularly those under 5 kilometres. Using a speed of 10mph (16kph) a catchment of 5km would be available within approximately 20 minutes cycle time. With this in mind, **Figure 4.4** shows the 5km cycle catchment from the site.

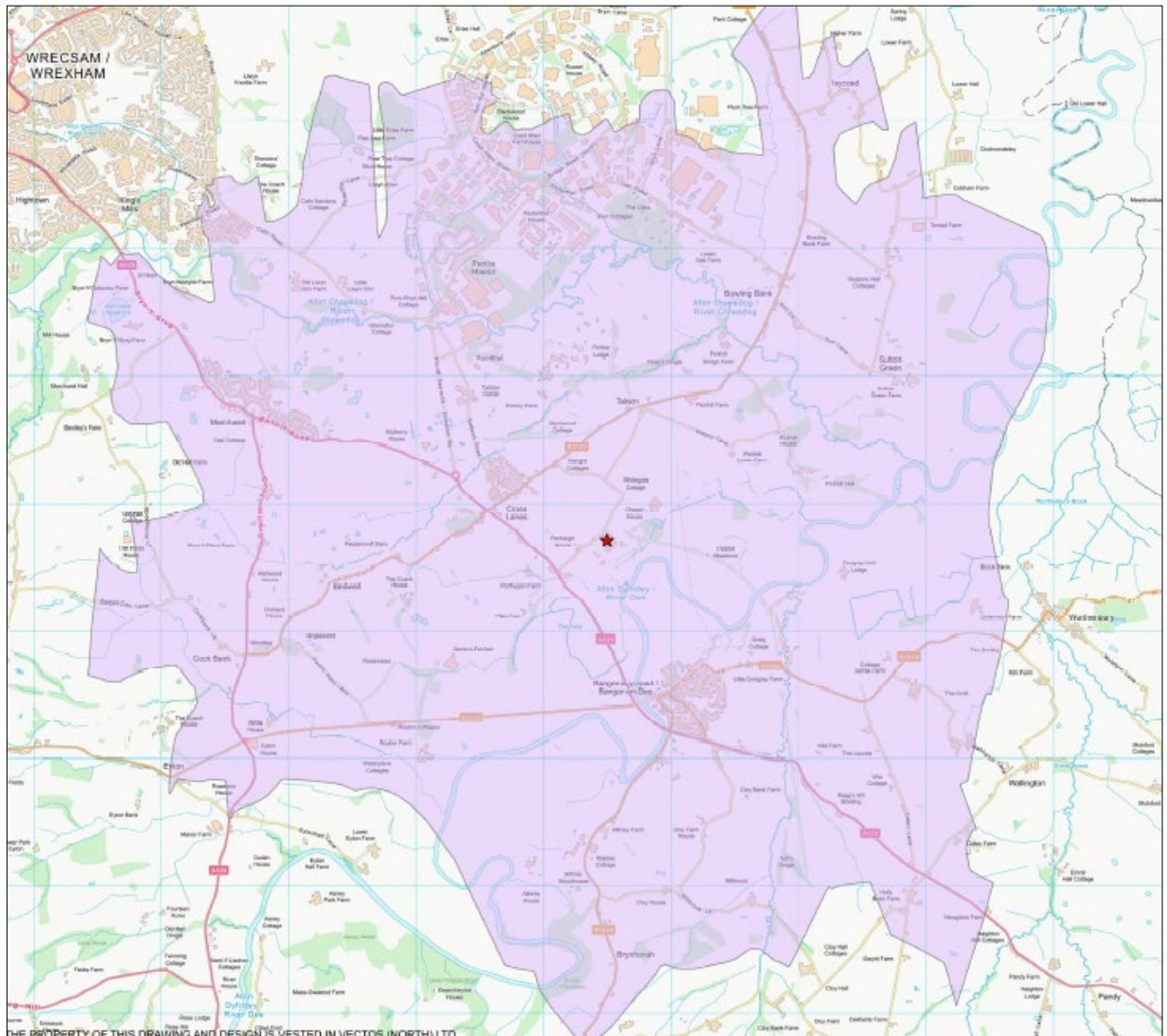


Figure 4.4: 5km Cycling Catchment

- 4.3.3 As can be seen, the 5km catchment encompasses Cross Lanes, Bangor Is-Y-Coed, Marchwiell, Pentre Maelor and the eastern outskirts of Wrexham, such as Abenbury Road. This catchment indicates that cycling could be seen as a viable form of commutable transport for those working on site and living in the surrounding residential areas.

4.4 Accessibility by Bus

- 4.4.1 Bus route 146 services the A525 providing a link between Wrexham and Whitchurch. The nearest bus stop to the site is located at Cross Lanes, approximately 1km walking/cycling distance from the site, and consists of a shelter and perch seating. Shown in **Table 4.1** is the frequency of the 146 bus service.

Bus Service/Frequency							
Route No.	Route	Mon – Fri Frequency per hour				Sat	Sun
		AM Peak	Midday	PM Peak	Evening		
146 (& X46)	Wrexham to Whitchurch via Cross Lanes	1	1	1	0	1	0

Table 4.1: Summary of 146 Bus Service

- 4.4.2 Including the additional X46 bus service, the first service arrives in Cross Lanes from Wrexham at 07:00hrs and at 07:40hrs from Whitchurch. The last service leaves Cross Lanes towards Wrexham at 17:16hrs and towards Whitchurch at 17:58hrs. The bus service may be suitable for use by some members of staff who work daytime shifts.

4.5 Accessibility by Rail

- 4.5.1 Wrexham railway station is located approximately 6.75km to the north west of the site, and is served via the bus route 146. The station is operated by Transport for Wales and provides a ticket office, ticket machines and a 68-space car park.
- 4.5.2 The station provides direct access to destinations such as Chester, Shrewsbury, Hereford, Wolverhampton, Birmingham New Street, Newport and Cardiff Central at regular intervals throughout the day. There are also regular services from Wrexham to Liverpool and Manchester.
- 4.5.2.1 Transport for Wales allow bicycles on trains where space is available. The station also provides 10 cycle hoops at the front of the station providing parking space for 20 bicycles. This offers the opportunity for some staff to possibly use the train as part of a linked journey.

5 BASELINE MODE SPLIT AND FUTURE TRAVEL SURVEYS

5.1 Mode Split

5.1.1 At the time of preparing this Travel Plan, formal staff travel surveys have not yet been undertaken at the site. Therefore, to assist in the formulation of initial targets, use has been made of the most recently available Census data in relation to travel modes. It should be noted that staff travel surveys will be included as part of subsequent Travel Plan updates.

5.1.2 The latest available Journey to Work (Method of Travel - 2011) Census Data has been obtained from the Office of National Statistics for the relevant Super Output Area (SOA). The area in which the site is located has been used in estimating the area's modal split. In this case the site is situated in 'SOA W02000095' and method of travel for work has therefore been taken for this area.

5.1.3 The data has informed the Travel Plan of the baseline travel habits that are considered to be typical of the existing staff within this particular area and is shown in **Table 5.1**.

Mode of Travel	Percentage (%)
Driving a car or van	85%
Passenger in a car or van	6%
On foot	4%
Bus, minibus or coach	2%
Train	1%
Bicycle	1%
Motorcycle, scooter or moped	1%

Table 5.1: Baseline Travel Data from 2011 Census

5.1.4 As shown in **Table 5.1**, the dominant mode of travel used by staff is by car, with a total of 91% of staff expected to be travelling by this mode when either being classed as a vehicle driver or passenger. The baseline travel data also shows that typically 4% of staff will be travelling on foot, with 2% travelling by bus, coach or mini-bus. Staff travelling by train, bicycle and motorbike all equal 1% respectively.

5.1.5 This baseline travel data has therefore been used to inform the Travel Plan of suitable targets to put in place at the site in order to reduce the volume of single-occupancy vehicle use and increase the take-up of sustainable travel options amongst staff.

5.2 Future Travel Surveys

- 5.2.1 Maelor Foods is committed to meeting the travel needs of its staff and aims to increase the use of sustainable travel modes, as well as supporting initiatives which actually reduce the need to travel. In order to do so, a comprehensive staff travel survey will be used to record staff travel behaviour.
- 5.2.2 Surveys will be completed via either a hard-copy or electronically using whichever option is most convenient to staff. Once completed the travel survey will then be collected by the appointed Travel Plan Co-ordinator.
- 5.2.3 Given that 150 staff are based at the site, it is anticipated that a relatively high response rate may be possible. This will enable the travel survey to record an accurate representation of overall staff travel at the site. It is estimated that travel surveys will be collected over 2 to 3 weeks from its the launch date.
- 5.2.4 The survey data will be used to investigate how staff are travelling, but it will also shed light on how they would prefer to travel. The travel survey will therefore obtain data on the number and percentage of staff choosing each preferred travel mode which will again help in refining the Travel Plan's objectives and related initiatives.
- 5.2.5 Each year, around the anniversary of the first staff survey, the Travel Plan Co-ordinator will review the Travel Plan to assess its success and to identify the potential for future refinement. The major element of the review will involve the re-issue of the travel survey to staff. The outcomes of this exercise will provide information on the progress and success of the measures and identify potential new initiatives.

6 OBJECTIVES AND TARGETS

6.1 Objectives

6.1.1 Based on the site's operational characteristics and the baseline Census data, four strategic objectives have been identified for the Travel Plan and are described in below:

Objective 1

Reduce the number of single-occupancy vehicles generated by the site

Lower parking demand at the site and reduce pressure on highway capacity/HGV movements

Objective 2

Increase active travel amongst staff

Using on-site infrastructure to encourage cycling, such as cycle hoops/stands and ensure measures are in place to promote active travel amongst staff

Objective 3

Reduce the site's carbon emissions

Improve air quality and the general health of staff and reduce the site's environmental impacts

Objective 4

Meet the needs of staff

Address specific transport-related issues that may arise from staff and meet community responsibilities associated with the site, such as HGV management and the delivery of produce.

6.2 Targets

6.2.1 To meet the aforementioned objectives, the Travel Plan outlines a number of 'SMART' targets which means they must be

- **S**ite-specific;
- **M**easurable;
- **A**chievable;
- **R**ealistic; and
- **T**ime-related.

6.2.2 The Travel Plan's targets are presented in **Table 6.1** below:

Target	Related Objective
To decrease the number of single-occupancy vehicles generated by the site by 10% over 5 years	Objective 1
To increase the percentage mode share of staff cycling by 2% from settlements within an acceptable distance from the site after 4 years post-adoption of the Travel Plan.	Objective 2
To reduce CO ₂ emissions after 3 years post-adoption of the Travel Plan.	Objective 3
To increase the % mode share of staff car sharing after 3 years post-adoption of the Travel Plan.	Objective 1
Ensure staff are made more aware of sustainable travel initiatives that Maelor Foods Ltd promote.	Objective 4

Table 6.1: Travel Plan Targets

- 6.2.3 As shown in **Table 6.1**, the Travel Plan has set out specific targets to help achieve outlined objectives. These targets are however considered aspirational at this stage and will be further refined in the context of staff travel survey results.
- 6.2.4 Shown in **Table 6.2** is a summary of the preliminary targets for major modes of transport based on the Travel Plan's objectives and the baseline Census data.

Year	Car Driver	Car Sharing	Bus	Train	Walking	Cycling	Motorbike
Baseline Census Data	85%	6%*	2%	1%	4%	1%	1%
+ 1 year	83%	8%	2%	1%	4%	1%	1%
+ 2 years	81%	9%	2%	1%	4%	2%	1%
+ 3 years	79%	10%	2%	1%	4%	3%	1%
+ 4 years	77%	12%	2%	1%	4%	3%	1%
+ 5 years	75%	14%	2%	1%	4%	3%	1%

*Recorded as a car passenger in the baseline Census data.

Table 6.2: Future Modal Split Targets

- 6.2.5 The Travel Plan's initial modal split targets are based on reducing single-occupancy vehicle use and replacing a proportion of these trips with car sharing trips. Given the location of the site and public transport in the vicinity, it is expected that trips by car will still be prominent and it is important that travel targets reflect this.
- 6.2.6 A target of reducing single-occupancy car trips by 10% over the next 5-year period is therefore considered both realistic and achievable. It is considered that the majority of displaced single-occupancy vehicle trips will switch to car sharing and the remaining trips will mainly switch to cycling from within the catchments previously presented.

7 TRAVEL PLAN MEASURES

7.1 Measures to Achieve Objective 1

Reduce the number of single-occupancy vehicles generated by the site

- 7.1.1 In order to achieve Objective 1, a selection of measures will focus on reducing staff travelling as a single-occupancy vehicle user. Such measures will include setting up a car sharing database, providing guaranteed parking spaces for car sharers, establishing a guaranteed 'Ride Home' scheme and considering a parking permit system for car sharers.

Measure 1: Setting up a car share database

- 7.1.2 Although some developments use an internal system to implement car sharing, the website Liftshare is now commonly used and is free to join. The website finds registered drivers and passengers that users can share with. For Maelor Foods, individual car sharing groups can be set up, for example, employee car sharing groups can be set up and can be tailored for the various conurbations where staff travel to and from the site.

- 7.1.3 Using a car sharing database such as Liftshare can prove to become successful at developments like the Maelor Foods site, with 75% of all registered journeys at some sites matched with car share partners. Furthermore, the scheme can be advertised in the staff area, where staff members can display their contact details and location for where lifts can be offered or are wanted.

Measure 2: Allocating more desirable spaces to Car Sharers

- 7.1.4 Dedicated parking spaces can be provided for those car sharing, as shown in **Figure 7.1**. Due to the number of parking spaces already provided at the site, there is already sufficient provision to cater for demand during peak periods (i.e. shift changeover times). Therefore, a strategy to allocate spaces nearer to the site's entrances may be considered more desirable to car sharers and could act as an incentive towards staff switching to this mode of travel.



Figure 8.1: Example of Dedicated Car Sharer Parking Spaces (Liftshare.com/uk)

Measure 3: Establish a guaranteed 'Ride Home' scheme

- 7.1.5 One of the main concerns for those car sharing is the overall reliance on their carsharing partner. Car sharers often worry about issues travelling home if their car sharing partner has to leave early or stay at work later than usual. This concern can often prevent possible car sharers from using this form of travel.
- 7.1.6 However, a guaranteed 'Ride Home' scheme can be set up by the Travel Plan Coordinator that will complement the overall car sharing scheme and further encourage the take-up of car sharing at the Maelor Foods site. The scheme would ensure that registered car sharers are able to get home in the event of an emergency or if an unforeseen event occurs during the working day.
- 7.1.7 The scheme would be supported by retrospectively reimbursing the costs incurred by an employee's journey home via an alternative mode of travel. It is expected that the guaranteed 'Ride Home' scheme will be used only occasionally should a car sharer need it.

7.2 Measures to Achieve Objective 2

Increasing active travel amongst staff

- 7.2.1 To achieve a higher uptake in staff choosing active travel within local settlements, measures will include setting up a bicycle user group, providing road safety education information and promoting a cycle to work scheme.

Measure 4: Establishing a Bicycle Users Group

- 7.2.2 A Bicycle Users Group will further encourage the use of cycling at the Maelor Foods site. The scheme could work by each member paying a small deposit, which is usually around £10, which would then enable events or cycle specific materials to be purchased (i.e. a cycle hub at the site with a pump and basic tools).

Measure 5: Implementing a strategy to maintain appropriate cycle parking spaces facilities

- 7.2.3 In order to maintain an increased uptake in cycle use at the Maelor Foods site, a strategy will be implemented by the Travel Plan Coordinator that will look at the upkeep of cycle parking facilities at the site and the installation of more cycle spaces if required. This will involve ensuring that careful consideration is given to the obstruction of cycle access where stands are present and possible options to improve the quality of cycle parking (i.e. location, shelter and CCTV).

- 7.2.4 The Travel Plan Coordinator will also liaise with the Highway Authority to ensure that available routes are appropriately maintained. Staff can be provided with secure lockers for storage of equipment and personal alarms could be provided for those actively travelling who request one, in order to improve personal security for them on local roads. High visibility jackets could also be provided if requested by staff in order to improve safety for them on the local roads.

Measure 6: Introduce a Cycling Promotion Strategy

- 7.2.5 Promotion days are a measure that aim to ensure that active travel information is widely available. Promotional material on bicycle maintenance can be made available on the staff noticeboard and information about special events such as Bike Week can be promoted to staff.

- 7.2.6 In order to promote active travel for those where it is realistic to do so, the Travel Plan Coordinator will hold bi-annual cycle promotion days. These events will promote the general aims of the Travel Plan and will ensure that staff are aware of the sustainable travel options available to them. The bi-annual promotion days will also give staff the opportunity to review their current travel arrangements and possibly opt for a more sustainable method of transport if they reside within an acceptable cycle distance of the Maelor Foods site.

Measure 7: Establish a 'Cycle to Work' Scheme

- 7.2.7 The Travel Plan Coordinator will look to introduce a cycle to work scheme in order to promote the use of cycling to and from the site. The cycle to work scheme will enable staff to hire cycles and cycle equipment from their employer as a tax-free benefit. At the end of the hire term, usually between 12 and 24 months, an employer can choose to sell the cycle to the employee at market value.
- 7.2.8 Eligibility for such a scheme will be dependent upon any salary sacrifice cycle purchasing options Maelor Foods provide. It is important that the eligibility, equipment, taxation credentials of the scheme are provided to the interested member of staff.

7.3 Measures to Achieve Objective 3

Reducing the site's carbon emissions

- 7.3.1 In order to reduce the Maelor Foods site's carbon emissions, measures will include encouraging the introduction of working practices that may have the potential to reduce single occupancy vehicle travel and ensuring future staff are not encouraged to commute by vehicle.

Measure 8: Encourage Working Practice Initiatives

7.3.2 The Travel Plan Coordinator will promote working practice initiatives, include giving staff the opportunity of flexible working options wherever possible. It is noted that such practices may or may not suit certain working departments within the site Maelor Foods site, but could include the following specific strands:

- Home working for office-based employees at the site – this can be more productive and efficient than working in an office every day and often increases staff productivity. Homeworking can also reduce staff turnover and can provide a better work/life balance by reducing stress and absenteeism;
- Remote working for office-based staff – this often uses smart technology that can allow staff to work in the office as well as other convenient locations via telecommunication/Skype; and
- Flexible working for both factory-based and office-based staff – this can give staff the opportunity to choose when weekly or annual hours are worked. By condensing working hours staff can generate a reduced number of trips to the site by vehicle, but will also work the number of hours per week as they usually would, for example, working 40 hours per week over 4 days instead of 5.

7.3.3 In addition to staff, good working practice will be promoted to all HGV drivers through the Service Management Plan and Driver Charter. Not only will this help to manage the impact of deliveries to and from the site but it can assist with local emissions, noise and air quality objectives.

7.3.4 Consideration will be given to advances in technology in order to help manage emissions. This relates to the type of HGVs and ensuring that they are regularly maintained and serviced with the most recent advances in engine technology considered when the vehicle fleet is renewed or replaced. In addition, consideration will be given to the provision of electric vehicle charging spaces dependent on the results of the initial staff travel survey.

7.4 Measures to Achieve Objective 4

Meet the needs of staff

- 7.4.1 It's important that Maelor Foods have a selection of measures in place that help address specific transport-related issues that may arise from staff. This will also meet community responsibilities associated with the site, such as HGV management and the overall vehicular impact of the site.

Measure 9: Establishing and maintaining a Maelor Foods Ltd Travel Plan Website

- 7.4.2 Measures to both encourage and maintain the take-up of sustainable travel options could be marketed on a Maelor Foods Travel Plan Website. By doing so, staff can be given the opportunity to review their travel options.
- 7.4.3 This website should be updated regularly by the Travel Plan Coordinator in order to provide the most up to date information regarding traffic, public transport, car sharing and active travel. This could also include information on potential travel cost and journey time savings by choosing an alternative travel mode.

Measure 10: Arrange Travel Plan Promotion Days

- 7.4.4 This measure will ensure that staff at the Maelor Foods site are aware of their sustainable travel options and will also provide them with the opportunity to switch modes. The Travel Plan Coordinator will run bi-annual Travel Plan Promotion Days where sustainable travel aims will be promoted. An example of such promotion is shown in **Figure 7.2**.



Figure 7.2: Example Sustainable Travel Promotion Stall

Measure 11: Provide a Travel Information Pack

7.4.5 Each new member of staff can be provided with a Travel Information Pack which will contain all the information an individual will need in order to make an informed choice on the mode of travel to be used for work-based journeys. Based on the site's location, the pack could comprise of the following information:

- An explanation of the Maelor Foods Travel Plan and why it is useful;
- A summarised explanation of car sharing and its benefits, included the Liftshare scheme;
- A summary of suitable routes for active travel, particularly for cycling around the site; and
- Public transport information if required.

7.4.6 The Travel Information Pack will also provide a link to access WCBC's Transport webpage which provides useful links for local travel.

8 ACTION PLAN

8.1.1 Set out in **Table 8.1** are actions that are high impact, yet achievable in the short term. The table also reflects the long-term aspirations. Though this first version of the Action Plan may have a relatively small number of actions, as the Travel Plan is delivered, reviewed and evaluated more actions will be added.

Theme/ Objective	Action	Timescales	Responsibility
Appoint a Future Travel Plan Coordinator	This will occur as soon as the Travel Plan is adopted. The Travel Plan Coordinator and will be the point of contact should any issues arise.	When the Travel Plan is adopted.	Maelor Foods
Distribute a staff travel survey	In order to collate accurate staff travel behaviour Vectos will design a travel survey which will be distributed to staff.	To be distributed as soon as possible.	Maelor Foods
Collate a Travel Information Pack for new staff as required.	Travel Information will be distributed to staff if and when required.	During the operation of the Travel Plan.	Travel Plan Coordinator.
Implementing the Travel Plan's Action Plan.	Travel Plan meetings where actions will be agreed upon to review, monitor and progress the Travel Plan.	Annually. The specific dates will be chosen by the Travel Plan Coordinator.	Travel Plan Coordinator.
Raising awareness of the Travel Plan.	Ensuring there is direct engagement with staff approaching them to discuss their individual travel needs.	Every 6 months to maintain a constant distribution of marketing material.	Travel Plan Coordinator.

Ensuring progress of the Travel Plan is evaluated.	Coordinate a short annual travel survey. This should be no more than 8 questions long and will give the Travel Plan Coordinator a consistent overall view of mode share at the Maelor Foods site. Larger travel surveys will also run every 3 years and will go into more detail regarding travel behaviour. Produce a short review highlighting progress and where improvements are needed. This is to be distributed to senior management and will also be a useful tool in summarising short/long term aims for the Travel Plan Coordinator.	The short travel survey is to run every spring and will avoid school holidays where staff travel may not be wholly representative. The specific period where surveys will be available to complete will be made clear by the Travel Plan Coordinator nearer the time. This is to be produced annually.	Travel Plan Coordinator.
Reduce the number of single occupancy vehicles generated by the site	Setting up/expanding a car share database. This will be done by actively marketing this mode of travel, as well as checking the car sharing database is fit for purpose and monitoring the number of staff using it.	A check of the car sharing database, including its usage figures and performance will be undertaken every 6 months by the Travel Plan Coordinator.	Travel Plan Coordinator.
	The provision of guaranteed parking spaces for car sharers within specific areas of the site.	Areas of parking dedicated to Car Sharing will be reviewed on an annual basis by the Maelor Foods Operational Manager/Travel Plan Coordinator.	Maelor Foods Operation Manager/Travel Plan Coordinator.
	Establish a guaranteed 'Ride Home' scheme.	The Travel Plan Coordinator will introduce this as part of the overall car sharing scheme to ensure the take-up of the scheme.	Travel Plan Coordinator.
	Consider the provision of a parking permit system. This will be looked into as a result of the Travel Plan Coordinator's annual review.	An evaluation of whether this would be a useful measure will be undertaken annually.	Travel Plan Coordinator.

Increase active travel amongst staff	Establishing a Bicycle Users Group.	If needed, the Bicycle Users Group will be established at an early stage and refresher sessions will be undertaken for staff on an ongoing basis when the Travel Plan Coordinator thinks they are warranted – this will be checked annually.	Travel Plan Coordinator.
	Implementing a strategy to maintain appropriate cycle parking spaces facilities. The Travel Plan Coordinator should also keep records of cycle storage in order to check the use of such facilities.	Checks on cycle storage usage will be carried out every 6 months.	Travel Plan Coordinator.
	Planning an annual events calendar which will promote travel choices and encourage those at the Maelor Foods site to review the way they travel.	Sustainable travel promotional events will be emailed to staff throughout the year.	Travel Plan Coordinator.
	Establish a 'Cycle to Work' Scheme.	Within the first year following formal adoption of the Travel Plan.	Travel Plan Coordinator
Reduce carbon emissions from the site	If this is applicable based on the nature of the Maelor Foods business, it will be done by promoting practices that reduce the need to travel by the Travel Plan Coordinator as detailed within the Travel Plan.	The Travel Plan Coordinator will promote such working practices if/when required.	Travel Plan Coordinator.
Encourage more trips by sustainable means	Establishing/maintaining a Maelor Foods Travel Plan Website. It is important that the Travel Plan Coordinator ensures this is kept up to date for the benefit of all staff.	The Travel Plan Coordinator will monitor any changes traffic/travel and will remain in contact with service providers should any changes occur.	Travel Plan Coordinator.

	Arrange Travel Plan Promotion Days to raise awareness of travel options. This may include introducing the following: - Maps of facilities available for sustainable travel. - Information packs/travel brochures - A Maelor Foods Car Sharing scheme.	Travel Plan Promotion days will be undertaken once per every 6 months in order to ensure those at the Maelor Foods site are aware of their sustainable travel options.	Travel Plan Coordinator.
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Table 9.1: Action Plan

9 MANAGEMENT STRATEGY

9.1 Travel Plan Coordinator

- 9.1.1 Maelor Foods have appointed a Travel Plan Coordinator who will design the imminent staff travel survey and will have responsibility for undertaking the tasks outlined within this document as part of the role. The contact details are provided below:

Martin Venables

Maelor Foods
Pickhill Lane
Cross Lanes
Wrexham
LL13 0UE
Tel: available on request
Email: available on request

- 9.1.2 To assist, Maelor Foods will aim to ensure that there is sufficient budget available to meet the investment required in travel-related activities at the site, as well as to ensure the Travel Plan supports the business' development. Management at Maelor Foods will also ensure the Travel Plan is referenced and supported by other relevant documents such as the company's Service Management Plan and Driver Charter.
- 9.1.2.1 It is also expected that going forward the Travel Plan Coordinator will have responsibility for liaising with staff and the day to day management of sustainable travel choices at the Maelor Foods site.

9.2 Marketing Strategy

- 9.2.1 A marketing strategy will be designed for the communication and promotion of the Travel Plan. The strategy will describe the range of communication tools and promotional techniques that will be used from the outset of the development and those that will be used on an on-going or phased campaign basis.

9.2.2 Listed within **Table 9.1** are examples of communication tools and promotional techniques:

Printed materials	Travel information packs / Summary of incentives for staff / Leaflet with payslips / Posters on staff notice boards
Electronic media	Possible Travel Plan website / Links to WCBC website/ Links to an online journey planning tool / Links to an online car share database
Activities	Personalised travel planning / Travel Plan news disseminated in staff meetings

Table 9.1: Marketing Measures

9.3 Monitoring and Progress Reports

9.3.1 The Action Plan will be used to inform regular progress reports. The reports will not be exhaustive in length but will give management at Maelor Foods a snap shot as to how the site is performing in relation to sustainable travel. The progress reports will be prepared by, and submitted to WCBC, by the Travel Plan Coordinator.

9.4 Updating the Action Plan

9.4.1 The Travel Plan Coordinator will update the Travel Plan's Action Plan every year in order to progress a consistent approach to tackling up to date sustainable travel issues at the Maelor Foods site. The Action Plan will be updated following the result of various staff travel surveys to be undertaken in the future.

9.4.2 Excluding short snapshot surveys, it is expected that a Travel Survey will be undertaken every three years by the Travel Plan Coordinator and will be signed off by senior management at Maelor Foods.

9.5 Ensuring Additional Issues are Investigated

9.5.1 Going forward, the Travel Plan Coordinator will ensure that other issues affecting sustainable travel at the Maelor Foods site are picked up on and discussed within future editions of the Travel Plan. The Travel Plan Coordinator will therefore be kept up to date with emerging WCBC policies, strategies and management procedures.

9.6 Liaising with WCBC

- 9.6.1 The Management Team at Maelor Foods and the Travel Plan Coordinator will ensure that WCBC are kept well informed of ongoing development in relation to sustainable travel and HGV movement and car park management at the site. This will include maintaining contact over survey analysis and receiving support over delivering the Travel Plan's Action Plan via progress meetings with the Council's Transport Planning Team.

10 SUMMARY

- 10.1.1 Vectos have been commissioned by Maelor Foods to provide a Travel Plan for a site located off Pickhill Lane in Wrexham. The Travel Plan builds upon the Framework Travel Plan prepared for the site when permission was granted for the change of use from a creamery to a poultry processing facility.
- 10.1.2 The Travel Plan will act as package of measures to encourage the take-up sustainable travel options. Such initiatives include reducing car travel and making a positive contribution to the community and the environment.
- 10.1.3 Maelor Foods is committed to increasing travel choice and reducing the dependency on the car, particularly discouraging single occupancy car trips. This will be achieved by providing a long-term management strategy for the site which will be improved, monitored, reviewed and adjusted to reflect changing circumstances. The Travel Plan will seek to encourage more sustainable travel and to reduce single occupancy car use whilst consideration will also be given to promoting sustainable modes to both current and future staff.

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