



SEASONAL TRAFFIC ASSESSMENT

LAND AT ROOK FARM, ST MARY'S ROAD
HAYLING ISLAND, HAMPSHIRE

Client: Gladman



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1 INTRODUCTION

1.1 Purpose of Report

- 1.1.1 This Seasonal Traffic Assessment (STA) considers the traffic impact implications associated with Gladman's proposal for a residential development comprising up to 300 dwellings at Rook Farm off St Mary's Road, Hayling Island, during the summertime period. The application is currently pending determination, having been validated by Havant Borough Council (HBC) in January 2022 and assigned the reference APP/21/01434.
- 1.1.2 This STA follows a Transport Assessment (TA) prepared by Prime Transport Planning (Prime) in support of the proposals which were allocated for residential development as Policy H27 Rook Farm in the now withdrawn Havant Borough Local Plan.
- 1.1.3 The traffic impact assessment undertaken in the TA utilised information from HBC's *Hayling Island Transport Assessment* (HITA) and its *Addendum* prepared as part of the evidence base to support the Local Plan. The main information used was the output of a microsimulation traffic model which is detailed further in the TA. The microsimulation modelling was undertaken by a specialist consultant in line with Department for Transport (DfT) guidance, as such it was based on a 'neutral' period. The model was used to assess the impact of the cumulative Local Plan development and concluded that it, subject to a package of mitigation measures, would not result in a 'severe' impact, nor an unacceptable impact on highway safety, in line with paragraph 111 of the National Planning Policy Framework (NPPF).
- 1.1.4 Subsequently, as part of their Initial Findings on the Local Plan Examination in Public (EiP), the examining Inspectors advised the Council that they should undertake further sensitivity testing of traffic generation and movements during tourist periods and weekends as part of its HITA work. Whilst the Local Plan itself has now been withdrawn, it is still referred to it in this report as 'emerging' as HBC continue to work on the supporting evidence base.
- 1.1.5 Prime attended the EiP, and whilst HBC highlighted that national modelling guidance calls for assessments to be undertaken during neutral periods, which occur outside of the summer months, school holidays and Bank Holidays, the Planning Inspectorate felt that further assessment was required, citing Hayling Island's attraction as a summertime holiday and daytrip destination. HBC has subsequently commissioned its consultants to undertake more detailed modelling work, however as the application by Gladman is currently pending consideration, Prime has been instructed to also consider a seasonal assessment, with HBC inviting the applicant to do so in its Planning Policy consultation response dated 17th March 2022.
- 1.1.6 The conclusions and recommendations contained herein have been drawn based on information available and obtained at the time of the assessment to which this report relates.

1.1.7 Reasonable checks have been carried out on any third-party information used in the preparation of this report but, nonetheless, Prime Transport Planning (Prime) accepts no liability for the accuracy or otherwise of this data.

1.1.8 Third-party rights are excluded for the use of information contained within this report.

1.2 Scope of Report

1.2.1 Following this introduction the remainder of this report is structured as follows:

- Section 2 provides further background to the request for a seasonal assessment and the existing assessment;
- Section 3 presents a detailed data analysis forming the Rook Farm seasonal assessment; and
- Section 4 provides a summary and conclusion.

2 ASSESSMENT BACKGROUND

2.1 Existing HITA and Microsimulation Model

2.1.1 Section 6 of the TA provides a summary of the HITA, HITA Addendum, microsimulation model and mitigation package.

2.1.2 The HITA details how a variety of data sources was used to construct the model. This includes:

- 3 x Automatic traffic counts (ATC) June 2017;
- Turning counts at 6 junctions between 19th and 26th June 2017;
- Additional unspecified turning counts, ATCs and video surveys to the above;
- Bluetooth journey time data June 2017; and
- Data from the Solent Transport's Sub-Regional Transport Model (SRTM).

2.1.3 The HITA references how the data is in line with DfT guidance as follows:

'In Unit M1.2: Data sources and surveys, Highway Surveys, Section 3.36 of the Government Transport Analysis Guidance (WEBTag) it is recommended that traffic counts for modelling purposes should be collected during a 'neutral', or representative month avoiding main and local holiday periods, local school holidays and half terms and other abnormal traffic periods.'

2.1.4 Senior staff at Prime have produced strategic traffic models in the past and are familiar with this guidance. We are in agreement with HBC's modelling consultant, that the data collected is 'neutral' and is therefore suitable for traffic modelling purposes. HBC defended this position at the EiP with Hampshire County Council (HCC), the local highway authority, seemingly content with the traffic modelling. Despite this, PINS has requested that a seasonal assessment should be undertaken which considers the impact of the Local Plan development on a busy weekend or tourist periods. We understand that this work has been requested to in order to demonstrate to a reasonable and proportionate degree that the Local Plan would not give rise to any severe impacts on the local highway network, taking account of this additional seasonal assessment.

2.1.5 It should also be acknowledged that there is likely to be an element of seasonal traffic in the microsimulation model flows, as the late June surveys should include tourist traffic given that it is a summer month that should have attracted tourists who have children not of school age and are therefore free of school term restrictions. In theory, June traffic flows should be higher than most months of the year, particularly autumn, winter and spring months.

2.2 Background to Methodology

2.2.1 HBC presented a methodology to PINS in its letter dated CR22. From reading CR23, which is a response to this, PINS stated:

'The proposed methodology notes it is important to engage with local residents and statutory consultees to agree the selected days and times prior to the additional modelling scenarios being run. We support this approach, but it is important that the worst-case scenario is tested and if that is a certain Wednesday in August 2021 and the August bank holiday weekend in 2021 then this should be modelled.'

- 2.2.2 The developers of the emerging Local Plan allocations were invited to attend a meeting on 4th March 2022 when HBC and their consultant outlined the proposed methodology for the seasonal assessment, with Prime in attendance on behalf of Gladman. HBC's methodology reflects the request from PINS in that an assessment will be undertaken on a summer time weekday (average of the last two Wednesdays in August) and August Bank Holiday weekend (Saturday or Monday depending on the busiest).
- 2.2.3 We do not fully agree with the methodology. Whilst it would seem reasonable to assess a summertime weekday to take account of potential tourist visits to Hayling Island and the typical 6-week summer holidays constituting 11.5% of the year (6 weeks out of 52), we believe the request to consider the impact on August Bank Holiday Weekend could be deemed excessive, with the Saturday, Sunday and Monday constituting less than 1% of the year (3 days out of 365). We would also question the methodology of basing the weekday seasonal assessment on the last two Wednesdays in August as the last Wednesday would be heavily influenced by the Bank Holiday weekend. Impact assessments, particularly where new highway infrastructure is being considered, should not be expected to mitigate for such a short period of the year. For instance, a major retail development would not be expected to assess its impact on Christmas Eve. Tourists, and indeed local residents, would expect the Bank Holiday weekend to be particularly busy. Short term traffic surges associated with such periods can often be managed using localised traffic management rather than installing physical mitigation measures.
- 2.2.4 Nevertheless, we acknowledge PINS's request and respect HBC's position. We also welcome further involvement/consultation with HBC's seasonal assessment. It is HBC's responsibility to prepare a sound Local Plan which satisfies PINS. We, however, are representing a developer with a live application and as such are working to a shorter timescale, and it is our responsibility to demonstrate that the proposed development will not result in a 'severe' impact. We have been instructed by Gladman to undertake a complementary seasonal assessment which focuses on the impact of the Rook Farm proposals.
- 2.2.5 We are confident that the assessment results presented in Section 3, provide HBC and HCC with confidence that the conclusions offered in the HITA Addendum remain applicable to the Rook Farm allocation and application.

2.3 Rook Farm Seasonal Methodology

Peak Periods

- 2.3.1 When considering the seasonal effects of traffic, it is important to firstly compare it with non-seasonal data to consider how the traffic flows vary, not only total traffic volume per day, but also in hourly traffic flows.
- 2.3.2 It is commonly accepted that the busiest times on a highway network, particularly during neutral periods, tend to be around the typical commuter periods of 07:00-10:00 and 15:00-18:00, referred to as the traditional AM and PM peak periods respectively. The period between these two is commonly referred to, in traffic terms, as the inter peak (IP) period (10:00-15:00), with the period following the PM and before the AM referred to as the off peak (OP) period (18:00-07:00). The level of traffic over the course of a day is known as the 'profile' with the AM peak tending to be higher but shorter than the PM peak, with a trough in the IP and a lower trough in the OP.
- 2.3.3 Our basic hypothesis is that the tourist traffic peak will occur in the IP, with the majority of tourist activity occurring after the AM peak when 'day trippers' arrive and tourists staying on the island 'venture out' of their accommodation, with tourists then predominantly departing before or after the PM peak to 'beat/avoid the traffic'.
- 2.3.4 We therefore suggest that the peak hours of the tourist traffic will not fully align with those of the residential traffic, which align with the traditional AM and PM peak periods. We do however acknowledge that a possible higher baseline of traffic during the seasonal periods, could lead to higher AM and PM peaks, which we believe was the common concern expressed by local residents during the EiP. The potential for a higher baseline could be countered by residential traffic also having elements of seasonality i.e. virtually no school traffic and parents taking time off work to look after their children during school holidays, and as such the associated trip generation being lower than during neutral periods. We do however accept that we do not have quantifiable evidence to demonstrate seasonal effects on residential traffic and as such will continue to base this assessment on the trip rates used in the HITA.

Tidal Flows

- 2.3.5 A second hypothesis we will consider is the tidal nature of traffic flow on and off the island. All of the emerging Local Plan allocations are located on the Island. The HITA details how much of the current working population commute off the Island to places of employment, with mainland parts of Havant and Portsmouth being the two most popular workplace destinations. As such, the commuting traffic, which constitutes much of the traffic on the A3023, travels northbound in the AM peak and southbound in the PM peak. There will be a mixing of this directional flow in the IP and OP. We believe that the tourist traffic, particularly day trippers, will be travelling in the reverse on the A3023, though again, much of these movements are expected to be taking place in the IP and OP.

2.3.6 Our seasonal assessment will therefore also consider tidal flows.

2.4 Data Sources

2.4.1 We have purchased data from HCC's Surveys Team in order to consider the magnitude of seasonal traffic. Data from the fixed traffic counter (ATC) on the A3023 to the north of Langstone Bridge, adjacent to The Ship public house, was chosen as it captures all movements onto and off the Island and is therefore more representative of seasonal conditions than other count sites.

2.4.2 Hourly data was selectively ordered for the following days:

- 26th June – 2nd July 2017;
- 24th July – 30th July 2017;
- 23rd August – 29th August 2017;
- 24th June – 30th June 2019;
- 22nd July – 28th July 2019; and
- 21st August – 27th August 2019.

2.4.3 The logic behind the selected dates was as follows:

- 2017 was the year that the base data for the microsimulation was collected, so it allows for a close matching of the datasets;
- 2019 was chosen as an update of 2017 and was the latest year to be unaffected by the Covid-19 pandemic. This therefore represents the most recent reliable data and provides a second dataset for consideration;
- Late June/early July best aligns with the bulk of the baseline data used in the microsimulation model;
- Late July is during the summer months and school holidays. The weather records for the six weeks that constitute the summer holidays but excluding the two weeks preceding and following Bank Holiday weekend were considered, and the dates were purposely chosen as the weather was at its most pleasant during these weeks;
- The August Bank Holiday weekend and preceding and following days was chosen as it aligns with HBC's 'worst-case' methodology.

2.4.4 The TRICS database has been used to consider the trip generation of the development site and the other emerging allocations as per the HITA methodology.

2.4.5 The following section presents the result from this data in tabular and chart format. Given that the raw data is the property of HCC, it has not been included in this report but will be provided electronically to HBC.

3 SEASONAL ASSESSMENT

3.1 Introduction

3.1.1 This section provides a summary of the data obtained from HCC to study the influence of seasonal traffic and to consider whether the conclusions of the HITA Addendum remain valid.

3.1.2 It should be noted that HCC updated the equipment at the permanent traffic counter in June 2019 so there are some minor variations in how the data is presented prior to and post 2019 which will be explained where relevant. The upgraded equipment did not change the accuracy of vehicle counts, but primarily aided vehicle classification which is not considered in detail in this assessment.

3.2 Weekday Assessment

Monthly Variation

3.2.1 A summary of the variation in weekday peak hours is presented in Table 3.1. Note that the old count equipment calculated peak hours rounded to the hour it occurred in whilst the upgraded count equipment calculated the average peak hour start time, hence the difference in the way the post June 2019 data is presented. Where peak hour data is presented as four digits, it is the hour beginning e.g. 08:00 is the hour 08:00-09:00.

Table 3.1: Monthly Peak Hour Variation (two-way)

Date	2017				2019			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Hour	Flow	Hour	Flow	Hour	Flow	Hour	Flow
Jan	08:00	1790	16:00	1900	08:00	1740	16:00	1878
Feb	08:00	1839	16:00	1991	08:00	1834	16:00	2028
Mar	08:00	1965	16:00	2106	08:00	1865	16:00	1970
Apr	11:00	2011	16:00	2174	11:00	1942	16:00	2066
May	10:00	1884	16:00	2102	11:00	1912	16:00	2074
Jun	08:00	1943	16:00	2161	07:34	1981	16:06	1960
Jul	11:00	1948	16:00	2159	11:00	1992	16:00	2053
Aug	11:00	2126	16:00	2182	11:00	2132	16:00	2103
Sep	08:00	1944	16:00	2088	11:00	1914	16:00	1997
Oct	08:00	1925	16:00	2124	11:00	1923	16:00	2022
Nov	08:00	2007	16:00	2071	11:00	1830	16:00	1929
Dec	11:00	1810	16:00	1860	11:00	1835	12:00	1871
Diff Jun vs Jul	-	-5	-	2	-	-11	-	-93
Diff Jun vs Aug	-	-183	-	-21	-	-151	-	-143

3.2.2 The table above shows a consistent PM peak hour of 16:00 in 23 of the 24 months presented. There was however greater variation in the AM peak hour, with the majority of months in 2017 being 08:00 and four months of 2019 also having this as the AM peak hour. The more seasonal months in 2017, April (Easter), July, August and December had peak hours of 11:00. In 2019, 11:00 was the

- AM peak hour across 8 months; it is not clear why this was the case in 2019, but perhaps there is only slight variation between the traditional AM peak and the local AM peak.
- 3.2.3 It is also interesting to consider the variation in traffic flow between the neutral and summer peak hours. In 2017, the 08:00 June AM peak hour was only 5 trips fewer than the 11:00 July AM peak hour, and 2 trips greater when comparing the two 16:00 peak hours, showing very little variation indeed. In 2019, the June AM peak was only 11 trips fewer than July but 93 trips fewer in the PM peak. The level of variation between June and August was greater, with June having 183 and 21 trips fewer in the respective AM and PM peak hours in 2017 and 151 and 143 fewer in 2019.
- 3.2.4 It is however important to consider the level of variation. Taking the greatest absolute difference of 183, as a percentage of the June flow of 1943, the difference is just 9.4%, and when considered in terms of trips per minute, 183 would be equivalent to just over 3 two-way trips. The percentage difference is below the >10% threshold that the Institute of Environmental Management and Assessment (IEMA) guidance (detailed in the Transport Environmental Statement chapter) would consider to be sufficient to cause greater than a negligible impact in specially sensitive areas; there are no road links in the study area that pass a specially sensitive areas as detailed in the ES chapter. The level of variation is more than three times lower than the >30% threshold suggested by the IEMA guidance for non-specially sensitive areas. The 30% threshold relates to a level at which people may perceive change and there may therefore be a notable effect. The level of variation should therefore not be considered to be significant.
- 3.2.5 The above data, particularly for 2017, somewhat supports our first hypothesis in the AM peak i.e. the tourist peak differs to the traditional peak. The same cannot be fully concluded of the PM peak, but perhaps the limited variation suggests that the tourist traffic has little influence over the PM peak, but even when comparing the absolute difference, the variation in August compared to June is equivalent to little greater than 3 two-way trips per minute and is not considered to be significant. These aspects will be considered in greater detail below.

Flow Profile Variation

- 3.2.6 Traffic volumes for the 12-hour period of 07:00-19:00 for each of the six weeks that data was purchased for have been summarised in Table 3.2 below. Included in the final column of the table are TRICS based trip rates applied in the microsimulation model to the private housing developments, including Rook Farm, as detailed in the HITA.
- 3.2.7 This 12-hour period has been chosen as it aligns with time period modelled as part of the microsimulation model and encompasses the AM, IP and PM peak periods; variation in the OP is seen as being less critical in the OP as the flows are lower.

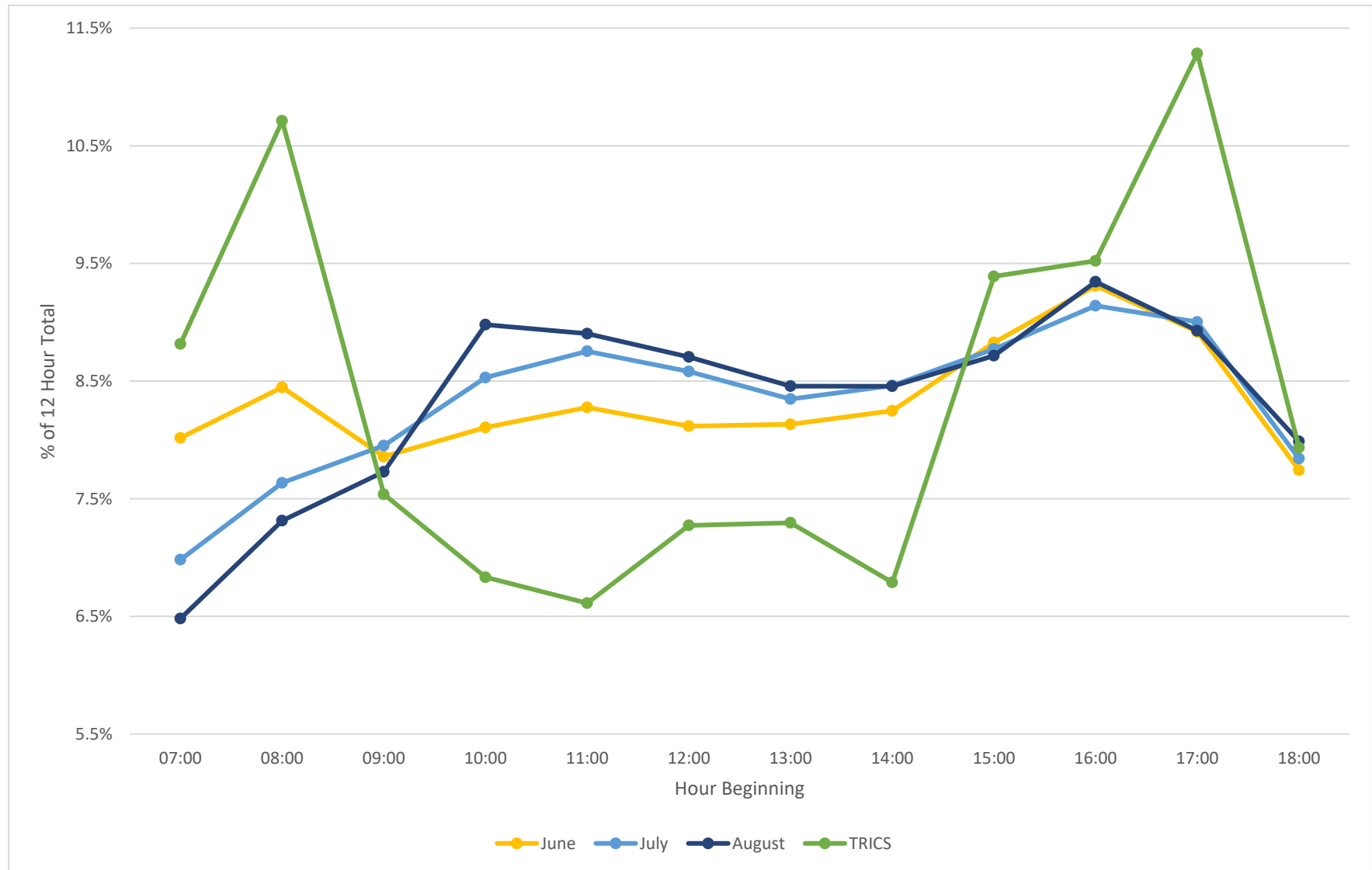
Table 3.2: Hourly Flow Comparison

Hour	Hourly Flow Volume						TRICS Rates
	June 17	July 17	August 17	June 19	July 19	August 19	
07:00	1844	1617	1597	1776	1666	1558	0.400
08:00	1905	1743	1773	1909	1847	1787	0.486
09:00	1776	1790	1870	1772	1949	1891	0.342
10:00	1812	1926	2186	1848	2085	2185	0.310
11:00	1828	2001	2182	1909	2115	2151	0.300
12:00	1827	1982	2132	1838	2053	2104	0.330
13:00	1799	1939	2057	1873	1986	2059	0.331
14:00	1835	1961	2079	1889	2018	2036	0.308
15:00	2004	2024	2144	1982	2101	2098	0.426
16:00	2084	2123	2295	2120	2175	2253	0.432
17:00	1976	2125	2139	2051	2108	2206	0.512
18:00	1752	1733	1974	1744	1954	1914	0.360
12 Hr	22442	22964	24427	22711	24057	24240	4.537

3.2.8 Table 3.3 presents the average hourly flows for the two years (2017 and 2019) and TRICS rates proportionate to the 12-hour totals. These proportions are then plotted in Chart 3.1 to illustrate the respective flow profiles.

Table 3.3: Average Hourly Flow and Trip Rate Comparison

Hour	Hourly Proportion of 12-Hour Flow/Rate			TRICS Rates
	June	July	August	
07:00	8.0%	7.0%	6.5%	8.8%
08:00	8.4%	7.6%	7.3%	10.7%
09:00	7.9%	8.0%	7.7%	7.5%
10:00	8.1%	8.5%	9.0%	6.8%
11:00	8.3%	8.8%	8.9%	6.6%
12:00	8.1%	8.6%	8.7%	7.3%
13:00	8.1%	8.3%	8.5%	7.3%
14:00	8.2%	8.5%	8.5%	6.8%
15:00	8.8%	8.8%	8.7%	9.4%
16:00	9.3%	9.1%	9.3%	9.5%
17:00	8.9%	9.0%	8.9%	11.3%
18:00	7.7%	7.8%	8.0%	7.9%
12 Hr	100.0%	100.0%	100.0%	100.0%

Chart 3.1: Hourly Flow Profiles

- 3.2.9 The above shows a distinct difference between the TRICS profile and the baseline (June, July and August) profiles for the three months. The TRICS profile shows notable peaks at 08:00 and 17:00 with a secondary peak at 15:00 and 16:00 and a trough in the IP. The baseline flows show less pronounced peaks but with notable variation between the three. The June AM peak at 08:00, whilst less pronounced than the TRICS AM peak, still aligns with it before reducing in the IP and reaching a PM peak at 16:00. The July AM peak occurs later at 10:00-11:00, as does the August AM peak at 10:00, with both only reducing slightly in the IP. Both the July and August PM peak occurs at 16:00 with a slight fall at 17:00. Of particular note, is that the August PM peak matches the June PM peak with a proportionate value of 9.3% and the July PM peak being slightly lower at 9.1%, with June and August reducing only very slightly to 8.9% at 17:00 with July being only 0.1% higher than June at this time. The TRICS proportions at 16:00 and 17:00 are notably higher at 9.5% and 11.3% respectively.
- 3.2.10 It can therefore be concluded that the peak hours assessed in the HITA and the Rook Farm TA of 08:00 and 17:00 actually present a reasonable weekday peak hour assessment i.e. the TRICS AM peak aligning with the busiest network peak in June which was when the baseline traffic surveys were undertaken, and the PM TRICS peak aligning with when the baseline PM peak begins to fall at 17:00 in June which was only 0.4% lower than 16:00 and equal to August. Whilst the results for the other hours were not fully presented in the HITA, the microsimulation model considered the full 12-hour period and it is assumed that the mitigation package provides a suitable level of network performance across all 12-hours.
- 3.2.11 The mitigation package assessed as part of the HITA and the Addendum was therefore assessed on a neutral baseline which has more pronounced peak hours than seasonal, summertime traffic flows. It is evident that the June traffic flow profiles are higher than the July and August equivalent in the AM peak hour and higher than July and closely comparable with August in the PM peak. It is only in the IP where the seasonal flow profiles are higher than the neutral flows, but this is when the residential flows are at their lowest meaning that the traffic impact of the Local Plan is proportionately lower.

Local Plan Traffic Impact

- 3.2.12 We can consider the above in greater detail by adding the development traffic to the baseline traffic flows recorded at the permanent counter. Figure 12 in the HITA presents commuter travel patterns from 2011 census method of travel to work (MTW) data and shows that up to 63% of people who live on the Island out-commute to workplaces on the mainland though it does not present figures for out-commuting by user class (drive, bus passenger, cycle etc).
- 3.2.13 As part of the previous application for the Rook Farm development in 2017 (APP/17/00007), Prime undertook a traffic impact assessment without the aid of the microsimulation model using more traditional assessment methods. The development traffic was distributed following an interrogation of MTW data which is included in Appendix 1 for reference. This showed that 75% of people travelling by car, are out-commuters off the Island.

3.2.14 We have calculated the total Local Plan trips by using the trip rates from Table 15 of the HITA, applying separate trip rates to houses and apartments. We have added the committed development to this, with the respective quanta shown in Tables 2 and 3 of Appendix C of the HITA respectively. The Local Plan development, based on 300 dwellings at Rook Farm rather than the 395 considered in the HITA, plus the 77 committed development dwellings totals 1,069 dwellings. The other committed development considered in the HITA, the Lidl foodstore on Manor Road, was not forecast to generate any trips off the Island. A factor of 75% has been applied to the trip generation to consider traffic heading to/from the mainland i.e. out-commuting trips. The 25% that will remain on the Island will dissipate across the Island's local highway network with several different routes being available.

3.2.15 A summary of the Local Plan trip rates and trip generation is included in Table 3.4.

Table 3.4: HITA Trip Rates and Trip Generation for Local Plan Development & Committed Development Passing Fixed Count Site

Time	Private Houses			Private Flats		
	Arrivals	Departures	Total	Arrivals	Departures	Total
HITA Trip Rates						
07:00	0.080	0.320	0.400	0.029	0.091	0.120
08:00	0.124	0.362	0.486	0.058	0.169	0.227
09:00	0.167	0.175	0.342	0.070	0.140	0.210
10:00	0.141	0.169	0.310	0.123	0.144	0.267
11:00	0.146	0.154	0.300	0.115	0.103	0.218
12:00	0.164	0.166	0.330	0.156	0.144	0.300
13:00	0.170	0.161	0.331	0.160	0.169	0.329
14:00	0.139	0.169	0.308	0.148	0.148	0.296
15:00	0.250	0.176	0.426	0.115	0.111	0.226
16:00	0.272	0.160	0.432	0.144	0.099	0.243
17:00	0.351	0.161	0.512	0.169	0.078	0.247
18:00	0.206	0.154	0.360	0.140	0.053	0.193
12 Hr	2.210	2.327	4.537	1.427	1.449	2.876
HITA Trip Generation						
07:00	48	193	241	5	17	22
08:00	75	219	294	11	32	43
09:00	101	106	207	13	26	39
10:00	85	102	187	23	27	50
11:00	88	93	181	22	19	41
12:00	99	100	199	29	27	56
13:00	103	97	200	30	32	62
14:00	84	102	186	28	28	56
15:00	151	106	257	22	21	43
16:00	164	97	261	27	19	46
17:00	212	97	309	32	15	47
18:00	124	93	217	26	10	36
12 Hr	1334	1405	2739	268	273	541

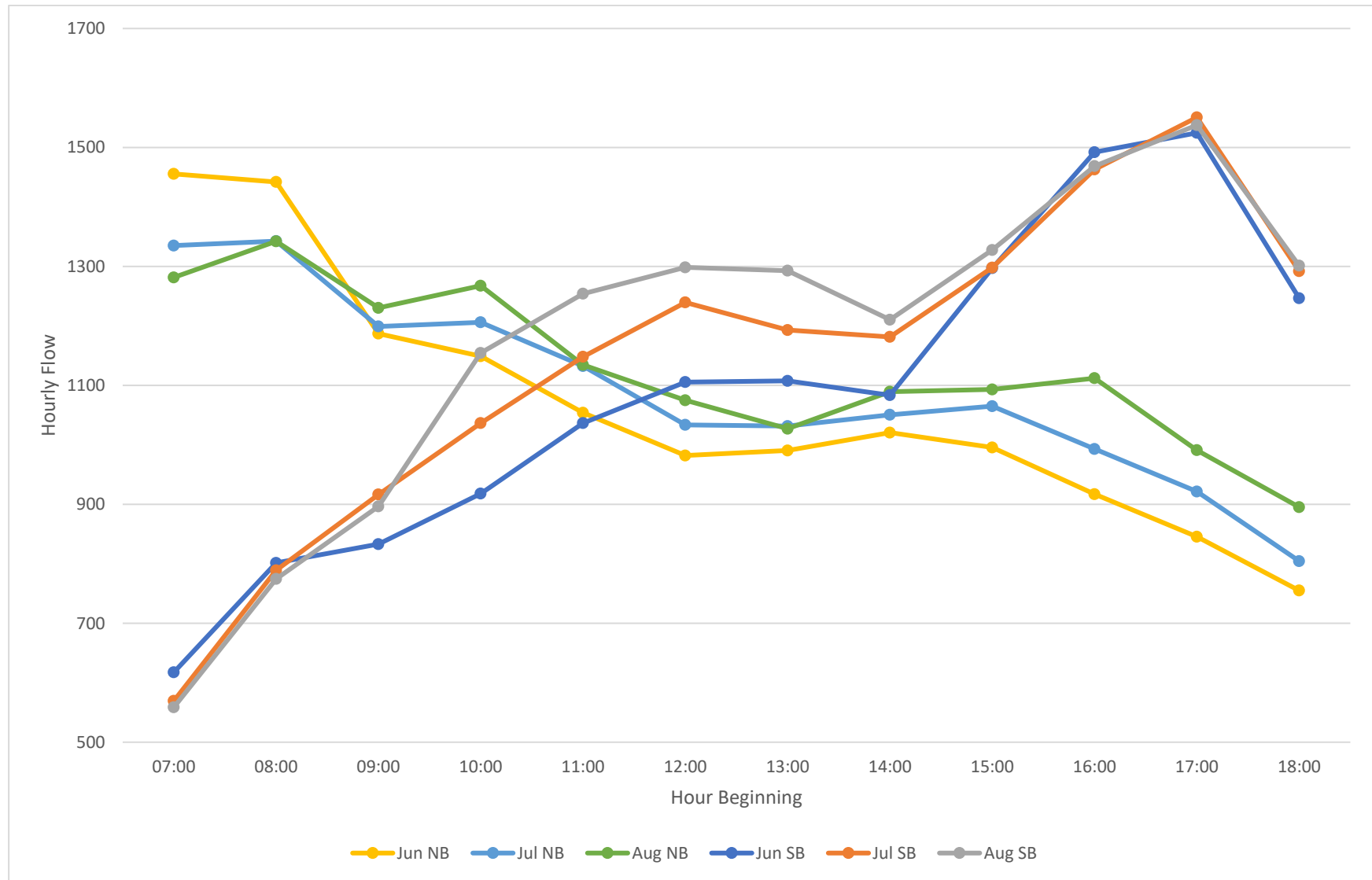
3.2.16 The Local Plan and committed developments are therefore expected to add 337 and 356 two-way trip to the A3023 north of Langstone Bridge respectively in the AM and PM peak hours. These flows have

been added to the June, July and August baselines flows as shown in Table 3.5, effectively forming the 2036 With Development scenario from the Rook Farm TA and the 2036 Do Minimum scenario from the HITA (but with 300 rather than 395 dwellings at Rook Farm). This is particularly robust as no seasonal adjustment has been applied to the Local Plan development or committed development traffic. It is also particularly robust as the trip rates do not take into account the increase in the number of people working from home and flexible working (varying working hours and part-time workplace/home working), both of which accelerated during the Covid-19 pandemic.

- 3.2.17 In order to consider the traffic profiles at a higher level of detail, the average of the June, July and August hourly traffic flows have been split by northbound and southbound with the development departures added to the northbound flows and the arrivals added to the southbound flows. The hourly directions With Development flows are shown in Table 3.5, with the profiles plotted in Chart 3.2.

Table 3.5: Hourly Traffic Flows – 2036 Baseline + Committed + Local Plan

Hour	Average Hourly Flow Volume					
	Jun NB	Jul NB	Aug NB	Jun SB	Jul SB	Aug SB
07:00	1456	1335	1282	618	570	559
08:00	1442	1343	1342	802	789	775
09:00	1187	1199	1230	833	917	897
10:00	1149	1206	1268	918	1037	1155
11:00	1054	1133	1134	1037	1148	1254
12:00	982	1034	1075	1106	1240	1298
13:00	991	1032	1027	1108	1193	1293
14:00	1021	1051	1089	1084	1182	1210
15:00	996	1065	1093	1297	1298	1328
16:00	917	993	1112	1492	1463	1469
17:00	846	922	991	1525	1551	1538
18:00	755	805	895	1247	1292	1301
12 Hr	12794	13115	13538	13063	13677	14075

Chart 3.2: Hourly Traffic Flow Profile – Baseline + Committed + Local Plan

- 3.2.18 Both the neutral June northbound and southbound flows are higher than the summertime July and August flows in the AM peak hour meaning that the findings of the HITA and the Addendum clearly remain valid for the AM peak.
- 3.2.19 In the PM peak, the southbound flows for all three weeks are very similar, with the June flows being just 26 vehicles per hour fewer than July, and 13 vehicles per hour fewer than August. Respectively, these figures are equivalent to less than one trip every two minutes and less than one trip every four minutes, or 1.7% and 0.85%. There is a greater difference in the more lightly trafficked northbound direction with the July and August flows being 76 and 146 trips greater than June, but this is the more lightly trafficked direction which will be less sensitive to increases in traffic flow. We believe that the findings of the HITA for the PM peak remain valid with the very slight seasonal variation in the summer months, which arguably should not form the basis for highway infrastructure improvements, unlikely to affect the mitigation package.

3.3 Weekend Assessment

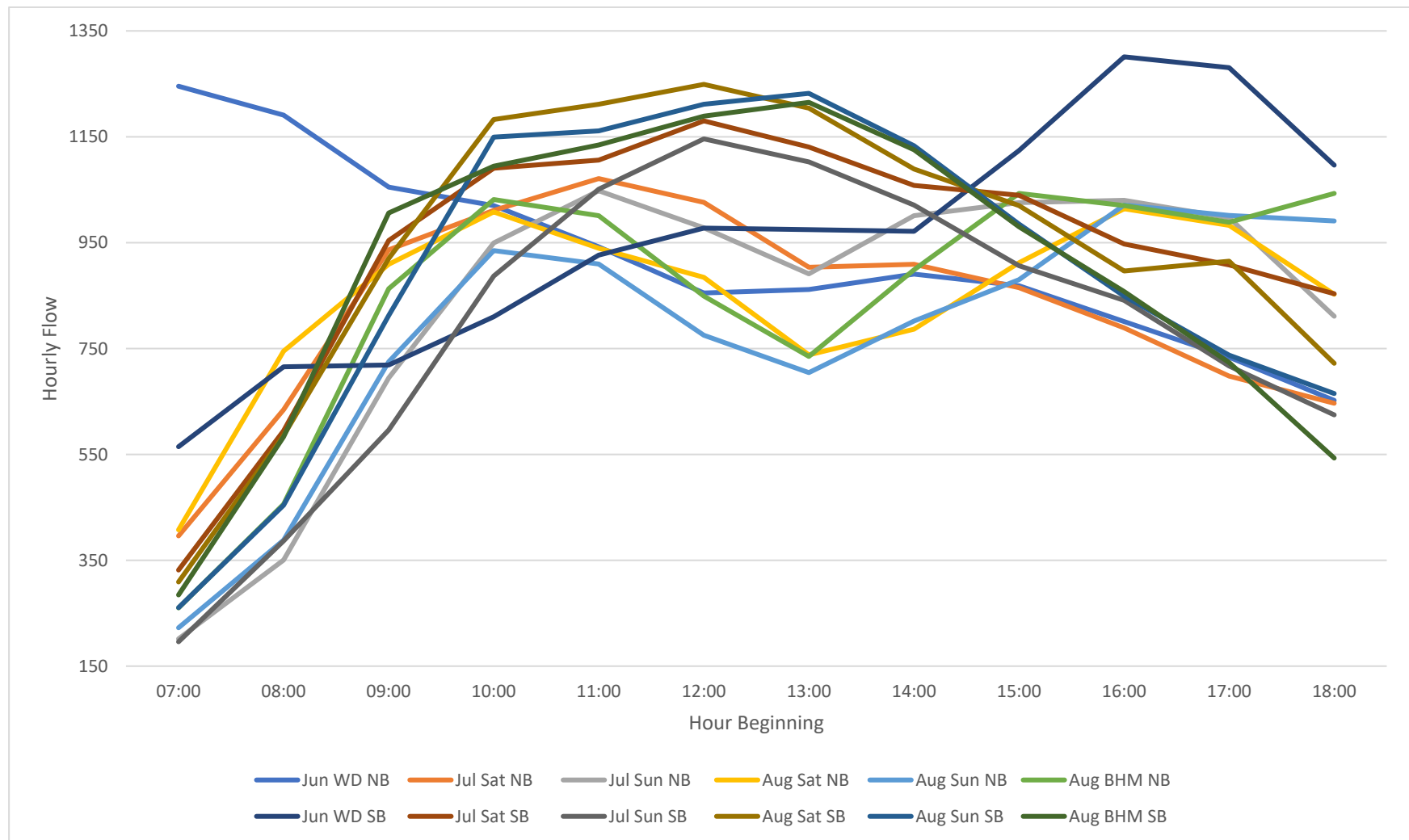
- 3.3.1 It is fairly unusual to undertake traffic impact assessments for residential development at the weekend. This is primarily due to a combination of residential developments generating less traffic on an hourly basis compared to weekdays and weekend baseline traffic flows generally being lower at the weekend. We do however recognise that this work has been requested by the Local Plan Inspectors, taking account of Hayling Island's potential to attract tourists and visitors over the weekend period.

June Weekday to Summer Weekend Comparison

- 3.3.2 We have first compared the hourly traffic flows by direction using the June weekday (WD) average, the July Saturday and Sunday values and the August Saturday, Sunday and Bank Holiday Monday (BHM) values. The values are shown in Table 3.6 and the profile illustrated in Chart 3.3.

Table 3.6: Hourly Flow Comparison – Weekday to Weekend

Hour	Hourly Flow Volume											
	Jun WD NB	Jul Sat NB	Jul Sun NB	Aug Sat NB	Aug Sun NB	Aug BHM NB	Jun WD SB	Jul Sat SB	Jul Sun SB	Aug Sat SB	Aug Sun SB	Aug BHM SB
07:00	1246	396	202	408	223	260	565	332	196	309	261	285
08:00	1191	635	351	745	388	456	716	595	387	586	454	583
09:00	1055	937	695	909	725	863	719	954	596	920	813	1006
10:00	1020	1011	950	1008	935	1032	810	1091	887	1183	1150	1095
11:00	942	1071	1048	940	910	1001	927	1106	1051	1212	1161	1135
12:00	855	1026	978	885	775	849	978	1180	1146	1249	1212	1189
13:00	862	904	891	738	705	735	975	1131	1103	1204	1232	1215
14:00	891	909	1001	787	802	899	972	1058	1021	1089	1133	1126
15:00	869	865	1026	912	880	1043	1124	1040	907	1020	985	980
16:00	801	789	1030	1014	1021	1020	1301	948	841	897	849	858
17:00	734	698	997	983	1002	989	1281	908	717	915	738	724
18:00	652	647	811	853	991	1043	1097	854	625	722	665	543
Max	1246	1071	1048	1014	1021	1043	1301	1180	1146	1249	1232	1215

Chart 3.3: Hourly Flow Profiles – Weekday & Weekend

- 3.3.3 As expected, the flow profile of the weekend varies to the weekday, with the weekend peak period occurring between 10:00 and 14:00. The time with the highest flow was 16:00 which was on the weekday, followed by 17:00, which again, was on the weekday. The HITA has therefore assessed and based the mitigation package on the busiest period (neutral weekday), which was busier than the busiest summertime weekend period. The assessment was therefore based on the worst-case baseline time period.

Local Plan Traffic Impact

- 3.3.4 As per the weekday Local Plan traffic impact assessment considered earlier in this section, the committed development and Local Plan development traffic can be added to the baseline flows to consider the influence it will have on the flow profiles, and ascertain whether more detailed assessment using the microsimulation model is required.
- 3.3.5 As weekend trip rates were not presented in the HITA, we have interrogated the TRICS database to derive Saturday and Sunday trip rates for houses privately owned, with the TRICS report outputs detailing the site selection process included in Appendix 2. The number of weekend surveys in TRICS is limited, which is indicative of the point that it is unusual to undertake weekend traffic impact assessments for residential development. Weekend surveys for flats in TRICS are more limited, as such a factor has been derived by comparing the weekday and weekend houses privately owned trip rates on an hourly basis. A summary of the weekend trip rates is included in Table 3.7 with the resultant trip generation associated with the committed developments and Local Plan development included in Table 3.8.

Table 3.7: Weekend Trip Rates

Time	Saturday			Sunday		
	Arr	Dep	Total	Arr	Dep	Total
Houses						
07:00	0.036	0.094	0.130	0.020	0.040	0.060
08:00	0.073	0.195	0.268	0.036	0.081	0.117
09:00	0.131	0.218	0.349	0.086	0.164	0.250
10:00	0.171	0.233	0.404	0.139	0.218	0.357
11:00	0.218	0.234	0.452	0.187	0.220	0.407
12:00	0.227	0.214	0.441	0.227	0.203	0.430
13:00	0.214	0.213	0.427	0.207	0.202	0.409
14:00	0.214	0.203	0.417	0.193	0.190	0.383
15:00	0.190	0.185	0.375	0.197	0.162	0.359
16:00	0.240	0.152	0.392	0.225	0.133	0.358
17:00	0.260	0.182	0.442	0.164	0.138	0.302
18:00	0.224	0.186	0.410	0.162	0.140	0.302
12 Hr	2.198	2.309	4.507	1.843	1.891	3.734
Flats						
07:00	0.013	0.027	0.040	0.007	0.011	0.019
08:00	0.034	0.091	0.125	0.017	0.038	0.055
09:00	0.055	0.174	0.229	0.036	0.131	0.167
10:00	0.149	0.199	0.348	0.121	0.186	0.307
11:00	0.172	0.157	0.328	0.147	0.147	0.294
12:00	0.216	0.186	0.402	0.216	0.176	0.392
13:00	0.201	0.224	0.425	0.195	0.212	0.407
14:00	0.228	0.178	0.406	0.205	0.166	0.372
15:00	0.087	0.117	0.204	0.091	0.102	0.193
16:00	0.127	0.094	0.221	0.119	0.082	0.201
17:00	0.125	0.088	0.213	0.079	0.067	0.146
18:00	0.152	0.064	0.216	0.110	0.048	0.158
12 Hr	1.560	1.597	3.157	1.344	1.367	2.711

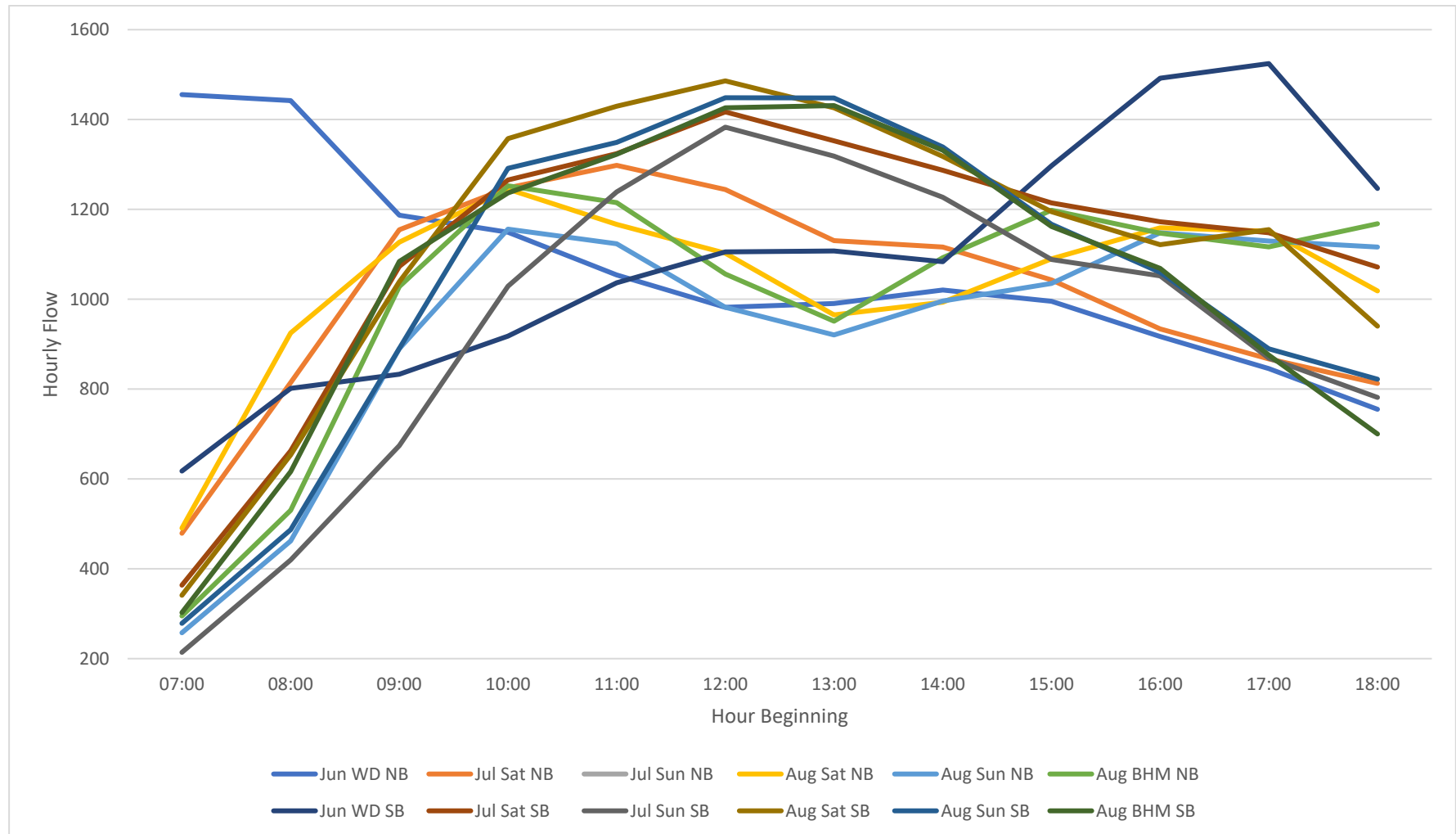
Table 3.8: Weekend Trip Generation for Local Plan Development & Committed Development
Passing Fixed Count Site

Time	Saturday			Sunday		
	Arr	Dep	Total	Arr	Dep	Total
Houses						
07:00	29	76	105	16	32	48
08:00	59	157	216	29	65	94
09:00	105	175	280	69	132	201
10:00	138	188	326	112	175	287
11:00	175	188	363	151	177	328
12:00	183	172	355	183	163	346
13:00	172	171	343	167	163	330
14:00	172	163	335	155	153	308
15:00	153	149	302	159	130	289
16:00	193	122	315	181	107	288
17:00	209	147	356	132	111	243
18:00	180	150	330	130	113	243
12 Hr	1768	1858	3626	1484	1521	3005
Flats						
07:00	3	7	10	2	3	5
08:00	9	23	32	4	9	13
09:00	14	43	57	9	33	42
10:00	37	49	86	30	46	76
11:00	43	39	82	37	37	74
12:00	54	46	100	54	44	98
13:00	50	56	106	49	53	102
14:00	57	44	101	51	41	92
15:00	22	29	51	23	25	48
16:00	32	23	55	30	20	50
17:00	31	22	53	20	17	37
18:00	38	16	54	27	12	39
12 Hr	390	397	787	336	340	676

- 3.3.6 The above trips have been added to the respective Saturday and Sunday trips and compared to the weekday HITA assessment flows. These are shown in Table 3.9 with the profiles illustrated in Chart 3.4.

Table 3.9: Hourly Traffic Flows – 2036 Weekend Baseline + Committed + Local Plan

Hour	Hourly Flow Volume											
	Jun WD NB	Jul Sat NB	Jul Sun NB	Aug Sat NB	Aug Sun NB	Aug BHM NB	Jun WD SB	Jul Sat SB	Jul Sun SB	Aug Sat SB	Aug Sun SB	Aug BHM SB
07:00	1456	479	237	491	258	295	618	364	214	341	279	303
08:00	1442	815	425	925	462	530	802	663	420	654	487	616
09:00	1187	1155	860	1127	890	1028	833	1073	674	1039	891	1084
10:00	1149	1248	1171	1245	1156	1253	918	1266	1029	1358	1292	1237
11:00	1054	1298	1262	1167	1124	1215	1037	1324	1239	1430	1349	1323
12:00	982	1244	1185	1103	982	1056	1106	1417	1383	1486	1449	1426
13:00	991	1131	1107	965	921	951	1108	1353	1319	1426	1448	1431
14:00	1021	1116	1195	994	996	1093	1084	1287	1227	1318	1339	1332
15:00	996	1043	1181	1090	1035	1198	1297	1215	1089	1195	1167	1162
16:00	917	934	1157	1159	1148	1147	1492	1173	1052	1122	1060	1069
17:00	846	867	1125	1152	1130	1117	1525	1148	869	1155	890	876
18:00	755	813	936	1019	1116	1168	1247	1072	782	940	822	700
Max	1456	1298	1262	1245	1156	1253	1525	1417	1383	1486	1449	1431

Chart 3.4: Hourly Traffic Flow Profile – Weekend Baseline + Committed + Local Plan

- 3.3.7 The June weekday AM peak northbound traffic flow is significantly higher than the other months. The August Saturday and Bank Holiday Monday flows are highest in the IP, but the June weekday PM southbound flows are significantly higher than the other months. This confirms that the weekday assessment is based on higher traffic flows than the seasonal weekend flows, therefore the findings of the HITA remain valid and robust.

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4 SUMMARY AND CONCLUSION

4.1 Summary

- 4.1.1 This Seasonal Traffic Assessment has been undertaken following a consultation response from HBC's Policy Team in relation to the outline application by Gladman for up to 300 dwellings on Rook Farm. HBC's request follows comments on the emerging Local Plan by the Planning Inspectorate following Examination in Public. The Planning Inspectorate deemed that the HITA and associated traffic modelling work should consider the impact of the Local Plan during the summer period when Hayling Island has the potential to attract tourist visits and trips. HBC has invited Gladman to undertake their own seasonal assessment whilst HBC carry out their own.
- 4.1.2 HBC has chosen to utilise their microsimulation model to consider the impact of the Local Plan related traffic during the summer months. Prime, working on behalf of Gladman, do not have full access to the microsimulation model so have undertaken a traditional assessment using data purchased from HCC from a fixed traffic counter on the A3023 north of Langstone Bridge.
- 4.1.3 The data purchased is from June, July and August in 2017 and 2019. Much of the data used to construct HBC's microsimulation model was from June 2017, which is a neutral month by definition of the DfT and includes elements of seasonal traffic with it being a summer month, so realistically it is a particularly robust month for HBC to have based their assessment on.
- 4.1.4 Comparisons have been made between this data and the July data which has been treated as a typical summertime period and data encompassing the August Bank Holiday weekend which has been considered as an absolute worst-case. Use of these months aligns with HBC's seasonal assessment methodology, but we do however believe that limited weight should be given to the Bank Holiday weekend assessment as any mitigation measures should not be based on surges in traffic for three days of the year; this can be better addressed through localised traffic management.
- 4.1.5 The monthly variation between the data has been investigated. This shows that the AM tourist peak hour occurs later than the traditional AM peak hour of the highway network during neutral periods and the traditional residential AM peak hour. There is close alignment with the tourist and neutral PM peak hours.
- 4.1.6 There is very little variation in the peak hour flows between June and July with slightly more variation between June and August, although the greatest variation is equivalent to around 3 two-way trips per minute and less than 10% which is unlikely to cause a notable effect in line with IEMA guidelines.
- 4.1.7 The flow profiles across the 07:00-19:00 time period, this being the same period assessed in the microsimulation modelling, have been investigated. This has been undertaken using the survey data and the trip rates used in the HITA. The residential traffic is shown to have pronounced peaks at 08:00, 16:00 and 17:00, with a significant trough in between. The traffic during the summer months,

however, tends to be proportionally higher between these periods, and with much less pronounced peaks than the residential traffic.

- 4.1.8 The Local Plan traffic has been added to this baseline data following the methodology of the HITA as closely as possible. This shows that the AM peak traffic flows were notably higher in the neutral June period than the summer periods. It also showed that there was very little variation in the PM peak between the three months assessed, meaning that the seasonal traffic has very little influence in the PM peak compared to the neutral period. It is clear that the June based assessment presented in the HITA is robust, meaning that the mitigation package as tested in the microsimulation model, should remain appropriate to mitigate the cumulative impact of the Local Plan development in the summer holiday period.
- 4.1.9 The Planning Inspectorate also requested that HBC undertake a weekend assessment, which is unusual for residential development. We have undertaken our own assessment using the data purchased from HCC. It shows that the weekend flow profile varies to that of the weekday, but the neutral weekday peaks by tidal traffic flow direction remain higher than those of the summer holiday weekends.
- 4.1.10 The Local Plan traffic impact assessment undertaken for the weekday has been repeated for the weekend using weekend residential trip rates. This shows that when adding the weekend development traffic to the baseline summer holiday weekend traffic, traffic flows for the weekday remain higher. As the weekend flows are lower than the weekday, the existing weekday HITA remains valid.

4.2 Conclusion

- 4.2.1 From our detailed analysis of traffic flows, it would appear that HBC's modelling work to support the emerging Local Plan remains robust and valid. The mitigation package designed and tested by HBC's consultant should remain fit-for-purpose and allows the cumulative impact of the development traffic to be accommodated on the local highway network in line with paragraph 111 of NPPF.
- 4.2.2 Given that the Rook Farm site forms one of the emerging allocations, the conclusion above remains applicable to the application. It should also be remembered that the HITA modelled the Rook Farm proposals at 395 dwellings, so the reduction to 300 dwellings associated with the application should effectively result in the mitigation package providing more capacity than what was reported in the HITA Addendum.
- 4.2.3 Gladman remain committed to financially contributing towards the mitigation package on a level commensurate to the scale of the application site.

APPENDIX 1

METHOD OF TRAVEL TO WORK DISTRIBUTION CALCULATION FROM APP/17/00007

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MSOA	Trips	MSOA Name	LAD	Local Area	Pri Route	Notes	Pri Route %	Sec Route	Sec Route %	
E02000524	3	Hillingdon 031	Hillingdon		A27 W	A3(M) N	0.3%			
E02000575	3	Islington 022	Islington		A27 W	A3(M) N	0.3%			
E02000970	3	Westminster 011	Westminster		A27 W	A3(M) N	0.3%			
E02006558	3	Arun 017	Arun		A27 E		0.3%			
E02004685	5	Basingstoke and Deane 011	Basingstoke and Deane		A27 W	A3(M) N	0.4%			
E02006566	6	Chichester 006	Chichester	Chichester N, Goodwood, Lavant, Singleton	A27 E		0.5%			
E02006567	6	Chichester 007	Chichester	Westbourne, Southbourne	A27 E		0.5%			
E02006568	25	Chichester 008	Chichester	Chichester central N	A27 E		2.2%			
E02006569	6	Chichester 009	Chichester	Emsworth E, Southbourn S, Nutbourne, Bosham	A27 E		0.5%			
E02006570	31	Chichester 010	Chichester	Chichester central S	A27 E		2.7%			
E02006571	9	Chichester 011	Chichester	Fishbourne, Stockbridge	A27 E		0.8%			
E02006572	5	Chichester 012	Chichester	Chichester S, North Mundham	A27 E		0.4%			
E02006573	4	Chichester 013	Chichester	Birdham, East & West Wittering, Bracklesham	A27 E		0.3%			
E02006578	3	Crawley 004	Crawley	Crawley central N	A27 E		0.3%			
E02004699	3	East Hampshire 003	East Hampshire		A27 W	A3(M) N	0.3%			
E02004706	5	East Hampshire 010	East Hampshire		A27 W	A3(M) N	0.4%			
E02004707	11	East Hampshire 011	East Hampshire		A27 W	A3(M) N	1.0%			
E02004708	15	East Hampshire 012	East Hampshire		A27 W	A3(M) N	1.3%			
E02004710	5	East Hampshire 014	East Hampshire		A27 W	A3(M) N	0.4%			
E02006829	9	East Hampshire 016	East Hampshire	Horndean, Rowlands Castle	B2149		0.8%			
E02004718	4	Eastleigh 007	Eastleigh		A27 W		0.3%			
E02004723	8	Eastleigh 012	Eastleigh		A27 W		0.7%			
E02004724	3	Eastleigh 013	Eastleigh		A27 W		0.3%			
E02004726	6	Eastleigh 015	Eastleigh		A27 W		0.5%			
E02004727	8	Fareham 001	Fareham		A27 W		0.7%			
E02004728	15	Fareham 002	Fareham		A27 W		1.3%			
E02004733	3	Fareham 007	Fareham		A27 W		0.3%			
E02004734	13	Fareham 008	Fareham		A27 W		1.1%			
E02004737	4	Fareham 011	Fareham		A27 W		0.3%			
E02004739	3	Fareham 013	Fareham		A27 W		0.3%			
E02004747	7	Gosport 007	Gosport		A27 W		0.6%			
E02004748	3	Gosport 008	Gosport		A27 W		0.3%			
E02004764	19	Havant 003	Havant	Waterlooville N, Cowplan W	A27 W	A3(M) N	1.6%			
E02004766	11	Havant 005	Havant	Waterlooville central, Purbrook NE	A27 W	A3(M) N	1.0%			
E02004767	4	Havant 006	Havant	Waterlooville E, Warren Park	B2149		0.3%			
E02004768	4	Havant 007	Havant	Waterlooville SE	A27 W	A3(M) N	0.3%			
E02004769	4	Havant 008	Havant	Havant N, Middle Park Way	B2149		0.3%			
E02004770	16	Havant 009	Havant	Havant NE, West Leigh	B2149		1.4%			
E02004771	7	Havant 010	Havant	Havant N, Purbrook Way	B2149		0.6%			
E02004772	20	Havant 011	Havant	Purbrook, Crookhorn	A27 W	A3(M) N	1.7%			
E02004774	18	Havant 013	Havant	Emsworth W & N	A27 E		1.6%			
E02004775	157	Havant 014	Havant	Havant central, Langstone	B2149	50/50	6.8%	L'stone Tech Park	6.8%	
E02004776	93	Havant 015	Havant	Ht: West Town, Fleet, Stoke, Tye, North Hayling	Manor Rd	70/30	5.6%	A3023 island	2.4%	
E02004777	89	Havant 016	Havant	Ht: South Hayling	Beach Rd	50/50	3.8%	Elm Grove	3.8%	
E02004778	107	Havant 017	Havant	Ht: Eastoke, Mengham	Elm Grove		9.3%			
E02006822	18	Havant 018	Havant	Bedhampton	B2149		1.6%			
E02006831	4	Havant 020	Havant	Cowplain central & E	A27 W	A3(M) N	0.3%			
E02006596	5	Horsham 009	Horsham		A27 E		0.4%			
E02003524	5	Portsmouth 001	Portsmouth		A27 W		0.4%			
E02003525	24	Portsmouth 002	Portsmouth		A27 W		2.1%			
E02003526	9	Portsmouth 003	Portsmouth		A27 W		0.8%			
E02003527	9	Portsmouth 004	Portsmouth		A27 W		0.8%			
E02003529	8	Portsmouth 006	Portsmouth		A27 W		0.7%			
E02003530	9	Portsmouth 007	Portsmouth		A27 W		0.8%			
E02003531	44	Portsmouth 008	Portsmouth		A27 W		3.8%			
E02003533	3	Portsmouth 010	Portsmouth		A27 W		0.3%			
E02003534	6	Portsmouth 011	Portsmouth		A27 W		0.5%			
E02003535	4	Portsmouth 012	Portsmouth		A27 W		0.3%			
E02003536	19	Portsmouth 013	Portsmouth		A27 W		1.6%			
E02003537	12	Portsmouth 014	Portsmouth		A27 W		1.0%			
E02003539	35	Portsmouth 016	Portsmouth		A27 W		3.0%			
E02003540	8	Portsmouth 017	Portsmouth		A27 W		0.7%			
E02003541	10	Portsmouth 018	Portsmouth		A27 W		0.9%			
E02003543	4	Portsmouth 020	Portsmouth		A27 W		0.3%			
E02003544	5	Portsmouth 021	Portsmouth		A27 W		0.4%			
E02003545	7	Portsmouth 022	Portsmouth		A27 W		0.6%			
E02003547	8	Portsmouth 024	Portsmouth		A27 W		0.7%			
E02003548	3	Portsmouth 025	Portsmouth		A27 W		0.3%			
E02006821	20	Portsmouth 026	Portsmouth		A27 W		1.7%			
E02004809	3	Rushmoor 008	Rushmoor		A27 W	A3(M) N	0.3%			
E02003695	7	South Bucks 008	South Bucks		A27 W	A3(M) N	0.6%			
E02003558	3	Southampton 010	Southampton		A27 W		0.3%			
E02003567	3	Southampton 019	Southampton		A27 W		0.3%			
E02003577	5	Southampton 029	Southampton		A27 W		0.4%			
E02004833	3	Winchester 005	Winchester		A27 W		0.3%			
E02004835	9	Winchester 007	Winchester		A27 W		0.8%			
E02004837	6	Winchester 009	Winchester		A27 W		0.5%			
E02004841	25	Winchester 013	Winchester		A27 W		2.2%			
E02004842	12	Winchester 014	Winchester		A27 W		1.0%			
E02006463	12	Woking 008	Woking		A27 W	A3(M) N	1.0%			
E02006631	3	Worthing 011	Worthing		A27 E		0.3%			
1156							86.9%	0%	13.1%	

Route	Pri %	Sec %	Total
A27 W	45.7%	0.0%	45.7%
A27 E	10.7%	0.0%	10.7%
B2149	11.8%	0.0%	11.8%
Manor Rd	5.6%	0.0%	5.6%
Beach Rd	3.8%	0.0%	3.8%
Elm Grove	9.3%	3.8%	13.1%
L'stone Tech Park	0.0%	6.8%	6.8%
A3023 island	0.0%	2.4%	2.4%
Total	86.9%	13.1%	100.0%

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APPENDIX 2

WEEKEND TRICS REPORT OUTPUT

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Calculation Reference: AUDIT-753001-220404-0449

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	1 days
04	EAST ANGLIA	
	NF NORFOLK	1 days
06	WEST MIDLANDS	
	WO WORCESTERSHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
 Actual Range: 297 to 1040 (units:)
 Range Selected by User: 5 to 4334 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 23/11/21

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Saturday 3 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count 1 days
 Directional ATC Count 2 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town 3

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone 2
 Out of Town 1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3 3 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

5,001 to 10,000 2 days

10,001 to 15,000 1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000 1 days

75,001 to 100,000 1 days

125,001 to 250,000 1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0 1 days

1.1 to 1.5 2 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Not Known 2 days

Yes 1 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present 3 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	HC-03-A-16	HOUSES & FLATS	HAMPSHIRE
	RIDGEWAY/MEADOW WAY		
	WINCHESTER		
	BADGER FARM		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	1040	
	Survey date: SATURDAY	09/12/00	Survey Type: DIRECTIONAL ATC COUNT
2	NF-03-A-07	MIXED HOUSES & FLATS	NORFOLK
	SILFIELD ROAD		
	WYMONDHAM		
	Edge of Town		
	Out of Town		
	Total No of Dwellings:	297	
	Survey date: SATURDAY	21/09/19	Survey Type: DIRECTIONAL ATC COUNT
3	WO-03-A-04	MIXED HOUSES	WORCESTERSHIRE
	MALVERN ROAD		
	WORCESTER		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	792	
	Survey date: SATURDAY	25/05/02	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
CM-03-A-01	Small size & contains bungalows

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TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	1	1040	0.059	1	1040	0.035	1	1040	0.094
01:00 - 02:00	1	1040	0.032	1	1040	0.018	1	1040	0.050
02:00 - 03:00	1	1040	0.014	1	1040	0.012	1	1040	0.026
03:00 - 04:00	1	1040	0.002	1	1040	0.001	1	1040	0.003
04:00 - 05:00	1	1040	0.004	1	1040	0.004	1	1040	0.008
05:00 - 06:00	1	1040	0.003	1	1040	0.010	1	1040	0.013
06:00 - 07:00	1	1040	0.002	1	1040	0.035	1	1040	0.037
07:00 - 08:00	3	710	0.036	3	710	0.094	3	710	0.130
08:00 - 09:00	3	710	0.073	3	710	0.195	3	710	0.268
09:00 - 10:00	3	710	0.131	3	710	0.218	3	710	0.349
10:00 - 11:00	3	710	0.171	3	710	0.233	3	710	0.404
11:00 - 12:00	3	710	0.218	3	710	0.234	3	710	0.452
12:00 - 13:00	3	710	0.227	3	710	0.214	3	710	0.441
13:00 - 14:00	3	710	0.214	3	710	0.213	3	710	0.427
14:00 - 15:00	3	710	0.214	3	710	0.203	3	710	0.417
15:00 - 16:00	3	710	0.190	3	710	0.185	3	710	0.375
16:00 - 17:00	3	710	0.240	3	710	0.152	3	710	0.392
17:00 - 18:00	3	710	0.260	3	710	0.182	3	710	0.442
18:00 - 19:00	3	710	0.224	3	710	0.186	3	710	0.410
19:00 - 20:00	1	1040	0.196	1	1040	0.169	1	1040	0.365
20:00 - 21:00	1	1040	0.093	1	1040	0.091	1	1040	0.184
21:00 - 22:00	1	1040	0.066	1	1040	0.036	1	1040	0.102
22:00 - 23:00	1	1040	0.066	1	1040	0.039	1	1040	0.105
23:00 - 24:00	1	1040	0.090	1	1040	0.060	1	1040	0.150
Total Rates:			2.825			2.819			5.644

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected:	297 - 1040 (units:)
Survey date range:	01/01/00 - 23/11/21
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	6
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	1

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Calculation Reference: AUDIT-753001-220404-0425

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	1 days
04	EAST ANGLIA	
	NF NORFOLK	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
	WO WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	2 days
08	NORTH WEST	
	CH CHESHIRE	1 days
11	SCOTLAND	
	EA EAST AYRSHERE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
 Actual Range: 22 to 1040 (units:)
 Range Selected by User: 5 to 4334 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 23/11/21

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Sunday 8 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count 6 days
 Directional ATC Count 2 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town 8

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone 7
 Out of Town 1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3 8 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	4 days
10,001 to 15,000	3 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	2 days
75,001 to 100,000	1 days
100,001 to 125,000	2 days
125,001 to 250,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	5 days
1.6 to 2.0	2 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Not Known	2 days
Yes	1 days
No	5 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	8 days
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This data displays the number of selected surveys with PTAL Ratings.

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LIST OF SITES relevant to selection parameters

1	CH-03-A-04 LIME TREE AVENUE CREWE	DETACHED / SEMI-DET.		CESHIRE
	Edge of Town Residential Zone Total No of Dwellings:	25		
	Survey date: SUNDAY	19/10/08	Survey Type: MANUAL	
2	EA-03-A-02 DALRY ROAD STEWARTON	DETACHED		EAST AYRSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	65		
	Survey date: SUNDAY	22/06/08	Survey Type: MANUAL	
3	HC-03-A-16 RIDGEWAY/MEADOW WAY WINCHESTER BADGER FARM	HOUSES & FLATS		HAMPSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	1040		
	Survey date: SUNDAY	10/12/00	Survey Type: DIRECTIONAL ATC COUNT	
4	NF-03-A-07 SILFIELD ROAD WYMONDHAM	MIXED HOUSES & FLATS		NORFOLK
	Edge of Town Out of Town Total No of Dwellings:	297		
	Survey date: SUNDAY	22/09/19	Survey Type: DIRECTIONAL ATC COUNT	
5	NY-03-A-02 CLOTHERHOLME ROAD RIPON	DETACHED		NORTH YORKSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	22		
	Survey date: SUNDAY	21/09/08	Survey Type: MANUAL	
6	NY-03-A-04 BOROUGHBRIDGE HORSEFAIR	PRIVATE HOUSING		NORTH YORKSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	23		
	Survey date: SUNDAY	14/09/08	Survey Type: MANUAL	
7	SH-03-A-02 GATCOMBE WAY TELFORD PRIORSLEE	DETACHED		SHROPSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	57		
	Survey date: SUNDAY	21/06/09	Survey Type: MANUAL	
8	WO-03-A-04 MALVERN ROAD WORCESTER	MIXED HOUSES		WORCESTERSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	792		
	Survey date: SUNDAY	26/05/02	Survey Type: MANUAL	

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

PRIME Transport Planning ' Hurricane Court Liverpool

Licence No: 753001

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	1	1040	0.061	1	1040	0.046	1	1040	0.107
01:00 - 02:00	1	1040	0.031	1	1040	0.028	1	1040	0.059
02:00 - 03:00	1	1040	0.013	1	1040	0.011	1	1040	0.024
03:00 - 04:00	1	1040	0.004	1	1040	0.004	1	1040	0.008
04:00 - 05:00	1	1040	0.001	1	1040	0.003	1	1040	0.004
05:00 - 06:00	1	1040	0.004	1	1040	0.006	1	1040	0.010
06:00 - 07:00	1	1040	0.002	1	1040	0.020	1	1040	0.022
07:00 - 08:00	8	290	0.020	8	290	0.040	8	290	0.060
08:00 - 09:00	8	290	0.036	8	290	0.081	8	290	0.117
09:00 - 10:00	8	290	0.086	8	290	0.164	8	290	0.250
10:00 - 11:00	8	290	0.139	8	290	0.218	8	290	0.357
11:00 - 12:00	8	290	0.187	8	290	0.220	8	290	0.407
12:00 - 13:00	8	290	0.227	8	290	0.203	8	290	0.430
13:00 - 14:00	8	290	0.207	8	290	0.202	8	290	0.409
14:00 - 15:00	8	290	0.193	8	290	0.190	8	290	0.383
15:00 - 16:00	8	290	0.197	8	290	0.162	8	290	0.359
16:00 - 17:00	8	290	0.225	8	290	0.133	8	290	0.358
17:00 - 18:00	8	290	0.164	8	290	0.138	8	290	0.302
18:00 - 19:00	8	290	0.162	8	290	0.140	8	290	0.302
19:00 - 20:00	1	1040	0.117	1	1040	0.091	1	1040	0.208
20:00 - 21:00	1	1040	0.112	1	1040	0.087	1	1040	0.199
21:00 - 22:00	1	1040	0.075	1	1040	0.039	1	1040	0.114
22:00 - 23:00	1	1040	0.075	1	1040	0.052	1	1040	0.127
23:00 - 24:00	1	1040	0.036	1	1040	0.020	1	1040	0.056
Total Rates:			2.374			2.298			4.672

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected: 22 - 1040 (units:)
 Survey date range: 01/01/00 - 23/11/21
 Number of weekdays (Monday-Friday): 0
 Number of Saturdays: 0
 Number of Sundays: 11
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.