



Technical Note 6

Title	Inglewood (P/2017/1133): Comparison of May 2017, July 2019 and September 2019 Traffic Survey Results				
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Date	17 October 2019			Version	2.0

1. Introduction

- 1.1. Key Transport Consultants (KTC) is retained by Abacus Projects Ltd/Deeley Freed Estates to provide transport advice in respect of the proposed Inglewood development on land south of White Rock, Paignton, TQ4 7BQ. Traffic surveys were undertaken in May 2017 for the November 2017 Transport Assessment (TA) submitted with the planning application for the proposed development. They were also used in the TA Addendum 1 dated January 2018.
- 1.2. Torbay's Windy Corner junction improvement works were largely completed in early July 2019 with minor works completed in September 2019. It was considered that the new layout may lead to a change in traffic flows on the local length of A3022 Brixham Road to the north. If this proved to be the case, the change in flows may result in a change in the results of the traffic impact analysis undertaken for the planning application.
- 1.3. KTC first updated the traffic surveys in late July 2019 after the Windy Corner works were substantially completed. This period in July is within the school summer holidays and was selected because some residents had expressed concern that traffic conditions in May were not representative of the conditions in the peak summer holiday period. The July week selected to update the surveys represented the first week of the state school holidays, which is normally one of the busiest weeks of the year for holiday traffic.
- 1.4. KTC also commissioned the same traffic surveys in September 2019 after the school summer holidays. Surveys in September are considered to represent a neutral month for traffic flows.
- 1.5. This Technical Note (TN) sets out a comparison of the results of the three sets of traffic surveys. It continues in Section 2 with a description of the surveys undertaken in 2017 and the two sets of surveys undertaken in 2019. A comparison of the survey results is set out in Section 3. Concluding comments are set out in Section 4.

2. Scope of Traffic Surveys

- 2.1. Manual traffic turning count surveys were undertaken at the following numbered junctions:
 1. A3022 Brixham Road/Goodrington Road/Long Road junction;
 2. A3022 Brixham Road/Kingsway Avenue/White Rock Way junction;
 3. A3022 Brixham Road/Hunters Tor Drive junction;
 4. A3022 Brixham Road/A379 Dartmouth Road/Langdon Lane Windy Corner junction.

- 2.2. The above surveys were undertaken between 07:00 and 10:00 and between 16:00 and 19:00 on:
- Tuesday 9 May 2017;
 - Tuesday 30 July 2019;
 - Tuesday 24 September 2019.
- 2.3. Week long automatic traffic counts (ATCs) were undertaken at the following locations:
- A3022 Brixham Road – north of the junction with Hunters Tor Drive;
 - A379 Dartmouth Road – north of the Windy Corner junction;
 - A379 Dartmouth Road – south of the Windy Corner junction.
- 2.4. The above ATCs were undertaken between:
- Tuesday 9 May 2017 and Monday 15 May 2017;
 - Saturday 27 July and Friday 2 August 2019 inclusive;
 - Saturday 21 September and Friday 27 September 2019 inclusive.

3. Results of Traffic Surveys

May 2017 and July 2019

- 3.1. **Table TN6-1** below shows a comparison of the total inbound flows to each of the junctions in the 2017 and July 2019 surveys. The results of the A3022 Brixham Road ATC are also shown.

Table TN6-1 Comparison of May 2017 and July 2019 Flows: Total Inbound to Junctions 1 – 4 and Total Flows at A3022 Brixham Road ATC										
Hour	Junction 1		Junction 2		Junction 3		Junction 4		A3022 Brixham Rd ATC (2 way)	
	2017	2019	2017	2019	2017	2019	2017	2019	2017	2019
08:00 - 09:00	2,312	1,632	1,337	1,094	1,375	1,037	2,548	1,794	1,222	1,037
16:00 - 17:00	2,648	2,130	1,540	1,488	1,537	1,356	2,551	2,426	1,433	1,274

- 3.2. An examination of the flows in **Table TN6-1** shows that total inbound flows to each of the four junctions in July 2019 were significantly lower when compared to the May 2017 flows. This is particularly so in the morning peak hour where inbound flows are between 70% and 82% of the flows surveyed in May 2017. This is most significant at the A3022 Brixham Road/Long Road/Goodrington Road (Junction 1) and Windy Corner (Junction 4) junctions, where flows in 2019 were 70% of the flows recorded in 2017.
- 3.3. Flows in the evening peak hour were also lower in July 2019, being between 80% and 97% of the flows surveyed in May 2017. The greatest change was at the junction of A3022 Brixham

Road/Long Road/Goodrington Road (Junction 1) where the July 2019 flows were 80% of those in May 2017.

- 3.4. The two way flow on A3022 Brixham Road from the one week ATC in July 2019 was some 85% of the May 2017 flow in the morning peak hour and 89% of the May 2017 flow in the evening peak hour.
- 3.5. The more detailed results of the surveys over the morning peak hour 08:00 to 09:00 and evening peak hour 16:00 to 17:00 are shown in **Figures TN6-1** and **TN6-2** respectively. The results of the May 2017 surveys are shown in blue and the July 2019 survey results are shown in red. The results of the A3022 Brixham Road ATC shown are based on five day average (weekdays) flows.
- 3.6. An examination of **Figure TN6-1** showing morning peak hour flows indicates that almost all July 2019 junction approach flows were lower than the equivalent hour surveyed in May 2017. The right turn out of Goodrington Road was significantly lower. In July 2019 89 vehicles were recorded, while it was 225 vehicles in May 2017. There was an increase in flows on White Rock Way, possibly reflecting the increase in development that is served by the road since the 2017 surveys.
- 3.7. **Figure TN6-2** showing evening peak hour flows indicates that almost all July 2019 junction approach flows were lower than those surveyed in May 2017. As in the morning peak hour, there was an increase in flows on White Rock Way probably reflecting the increase in development that is served by the road since the 2017 surveys. Whilst total inbound flows to the Windy Corner junction (Junction 4) had reduced, the southbound flow on the A379 Dartmouth Road (north) approach to the Windy Corner junction had increased to 670 vehicles in July 2019, compared with 571 vehicles in May 2017.
- 3.8. An examination of the July 2019 survey results shows that the hourly flows recorded between the morning and evening peak hours, generally referred to as the inter-peak flows, were lower at all times than the flows in the evening peak hour 16:00 to 17:00, as described above. The evening peak hour flow was higher than the morning peak hour flow. This means that the peak hour for traffic flows in the July week surveyed has been identified as the evening peak hour 16:00 to 17:00.

May 2017 and September 2019

- 3.9. As an initial check, a comparison of the results of the manual traffic counts undertaken on 24 September and the ATCs undertaken over the week from 21 to 27 September 2019, indicates that the manual counts are broadly representative of the five day ATC weekday averages. On this basis manual counts represent a neutral day of traffic flows.

- 3.10. Also, the September 2019 flows over the evening peak hours 16:00 to 17:00 and 17:00 to 18:00 were compared. As in May 2017, the traffic flows over the earlier hour 16:00 to 17:00 were higher than over the following hour. On this basis, the flows over the hour 16:00 to 17:00 have been used in the following comparison.
- 3.11. **Table TN6-2** below shows a comparison of the total inbound flows to each of the junctions in the 2017 and September 2019 surveys. The results of the A3022 Brixham Road ATC are also shown.

Table TN6-2 Comparison of May 2017 and September 2019 Flows: Total Inbound to Junctions 1 – 4 and Total Flows at A3022 Brixham Road ATC										
Hour	Junction 1		Junction 2		Junction 3		Junction 4		A3022 Brixham Rd ATC (2 way)	
	2017	2019	2017	2019	2017	2019	2017	2019	2017	2019
08:00 - 09:00	2,312	2,483	1,337	1,241	1,375	1,191	2,548	2,318	1,222	1,218
16:00 - 17:00	2,648	2,535	1,540	1,480	1,537	1,375	2,551	2,429	1,433	1,151

- 3.12. An examination of the flows in **Table TN6-2** shows that, apart from at the A3022 Brixham Road/Goodrington Road/Long Road junction (Junction 1) in the morning peak hour, flows were lower in the September 2019 surveys than in the May 2017 surveys.
- 3.13. At Junction 1, total inbound flows in the September morning peak hour were some 7% higher than in May. In the evening peak hour the September total inbound flow was 96% of the May flow. A significant proportion of the increase in the morning peak hour is considered likely to be due to the addition of committed development traffic that is now on the local road network but which was not in 2017.
- 3.14. At Junction 2 the September flows were between 93% and 96% of those surveyed in May. At Junction 3 the September flows were between 87% and 89% of those surveyed in May while at Junction 4 the September flows were between 91% and 96% of those surveyed in May. The September ATC on A3022 Brixham Road was very similar to the May flow in the morning peak hour but 80% of the May flow in the evening peak hour.
- 3.15. Whilst the reasons for the differences between the September 2019 and May 2017 flows are not immediately apparent, it is generally clear that the May flows were higher and represent a set of robust traffic flows for junction capacity testing purposes.
- 3.16. The more detailed results of the surveys over the morning peak hour 08:00 to 09:00 and evening peak hour 16:00 to 17:00 are shown in **Figures TN6-3** and **TN6-4** respectively. The results of the May 2017 surveys are shown in blue and the September 2019 survey results are shown in green. The results of the A3022 Brixham Road ATC shown are based on five day average (weekdays) flows.

- 3.17. An examination of **Figure TN6-3** showing morning peak hour flows indicates that the majority of September 2019 junction approach flows were lower than the equivalent hour surveyed in May 2017. Through flows on Brixham Road were generally lower, as described in further detail at paragraph 3.20. The exceptions to the decreases were at the Brixham Road/Goodrington Road/Long Road junction where flows on the Brixham Road (north), Long Road and Goodrington Road approaches were higher than in May 2017. The reason for these increases appears to be the increase in completed development served via Long Road in particular since May 2017. The two way flow on Long Road has increased by over 50% since the May 2017 surveys.
- 3.18. The morning peak hour flows at the Brixham Road/Kingsway Avenue/White Rock Way junction (Junction 2) were lower than in May 2017 but were higher on the White Rock and Kingsway Avenue approaches. The reason for these higher flows appears to be the increase in development served via White Rock since May 2017.
- 3.19. The morning peak hour flow on Hunters Tor Drive in September 2019 was similar to the flow in May 2017.
- 3.20. Northbound flows on Brixham Road north of Windy Corner in September 2019 were 81.5% of May 2017 flows in the morning peak hour. The morning peak hour queue length surveys undertaken at the Windy Corner junction on Tuesday 24 September 2019 do not show significant queues on the two A379 junction approaches feeding the northbound flow on Brixham Road so the reason for this reduction in flows is unclear. Southbound morning peak hour flows were 91.6% of May 2017 flows.
- 3.21. An examination of the flows on **Figures TN6-4** showing evening peak hour flows indicates that the majority of September 2019 junction approach flows were lower than in the equivalent hour surveyed in May 2017. Through flows on Brixham Road were generally lower, as described in further detail at paragraph 3.23. The main exceptions to these decreases were on Long Road approach at the Brixham Road/Goodrington Road/Long Road junction and A379 Dartmouth Road (north). The increase in two way traffic on Long Road, at 16%, was less significant than the increase in the morning peak hour and would appear to be due to the increase in completed development served via Long Road since May 2017.
- 3.22. The traffic on the A379 Dartmouth Road (north) approach to the Windy Corner junction in the September evening peak hour was some 22% higher than the flow in the May 2017 surveys. The increase in vehicles of 133 is slightly lower than the decrease noted on the Brixham Road approach to Windy Corner at 159 vehicles. This may indicate that some drivers are choosing to head south via Dartmouth Road rather than via Brixham Road. As noted below, queues on the Brixham Road approach have increased since May 2017. Queues have also increased on the Dartmouth Road (north) approach but to a lesser extent than on Brixham Road.

3.23. Southbound flows on Brixham Road in the evening peak hour north of Windy Corner in September 2019 were 79% of May 2017 flows. The northbound flows were 97.5% of May 2017 flows. The evening peak hour queue length surveys undertaken at the Windy Corner junction on Tues 24 September 2019 show some longer in queues on the Brixham Road junction approach from those recorded in May 2017. This may be the reason for the lower southbound morning peak hour flow.

4. Conclusions

- 4.1. The original traffic surveys first undertaken in May 2017 were repeated in July and September 2019 to see if traffic flows had changed significantly after completion of the Torbay Windy Corner junction improvement works. The surveys were repeated in a week in late July, as the first week of the state school holidays, which is normally one of the busiest weeks of the year for holiday traffic. The surveys were also repeated in a week in September after the state school summer holidays following the completion of the Windy Corner junction improvement works. September surveys are considered to represent a neutral month for traffic flows.
- 4.2. This Technical Note sets out a comparison of the results of the three sets of traffic surveys. The comparison indicates that the July 2019 morning and evening peak hour flows were almost comprehensively lower than those surveyed in May 2017. On this basis KTC do not consider that the traffic capacity analysis undertaken in the November 2017 Transport Assessment and subsequent submissions need be repeated using the July 2019 traffic flows.
- 4.3. With one exception, the comparison of the September 2019 and May 2017 surveys shows that the September 2019 surveyed flows into the junctions were generally similar to, but lower than, the flows surveyed in May 2017. The main exception to this was the traffic flow at the A3022 Brixham Road/Goodrington Road/Long Road junction in the morning peak hour where flows in September 2019 were some 7% higher than in May 2017. A significant proportion of the increase in the morning peak hour is considered likely to be due to the addition of development traffic that is now on the local road network but which was not in 2017. On this basis KTC do not consider that the traffic capacity analysis undertaken in the November 2017 Transport Assessment need be repeated using the September 2019 traffic flows.
- 4.4. It is considered that the results of the May 2017 surveys, on which the analysis of the Inglewood proposals have been analysed to date, continue to represent a robust set of traffic flows for traffic analysis purposes.

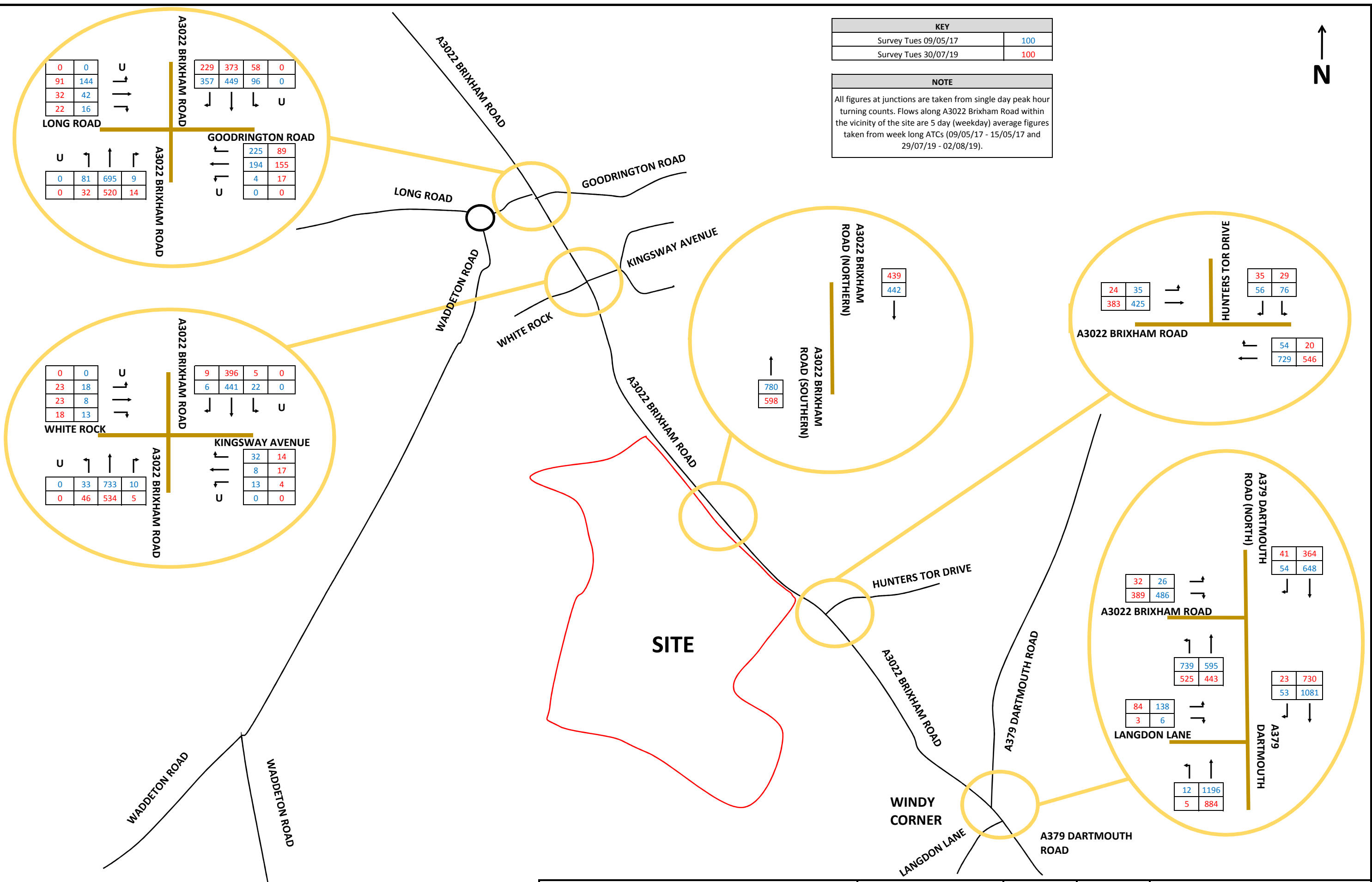
17 October 2019

FIGURES



KEY	
Survey Tues 09/05/17	100
Survey Tues 30/07/19	100

NOTE
 All figures at junctions are taken from single day peak hour turning counts. Flows along A3022 Brixham Road within the vicinity of the site are 5 day (weekday) average figures taken from week long ATCs (09/05/17 - 15/05/17 and 29/07/19 - 02/08/19).

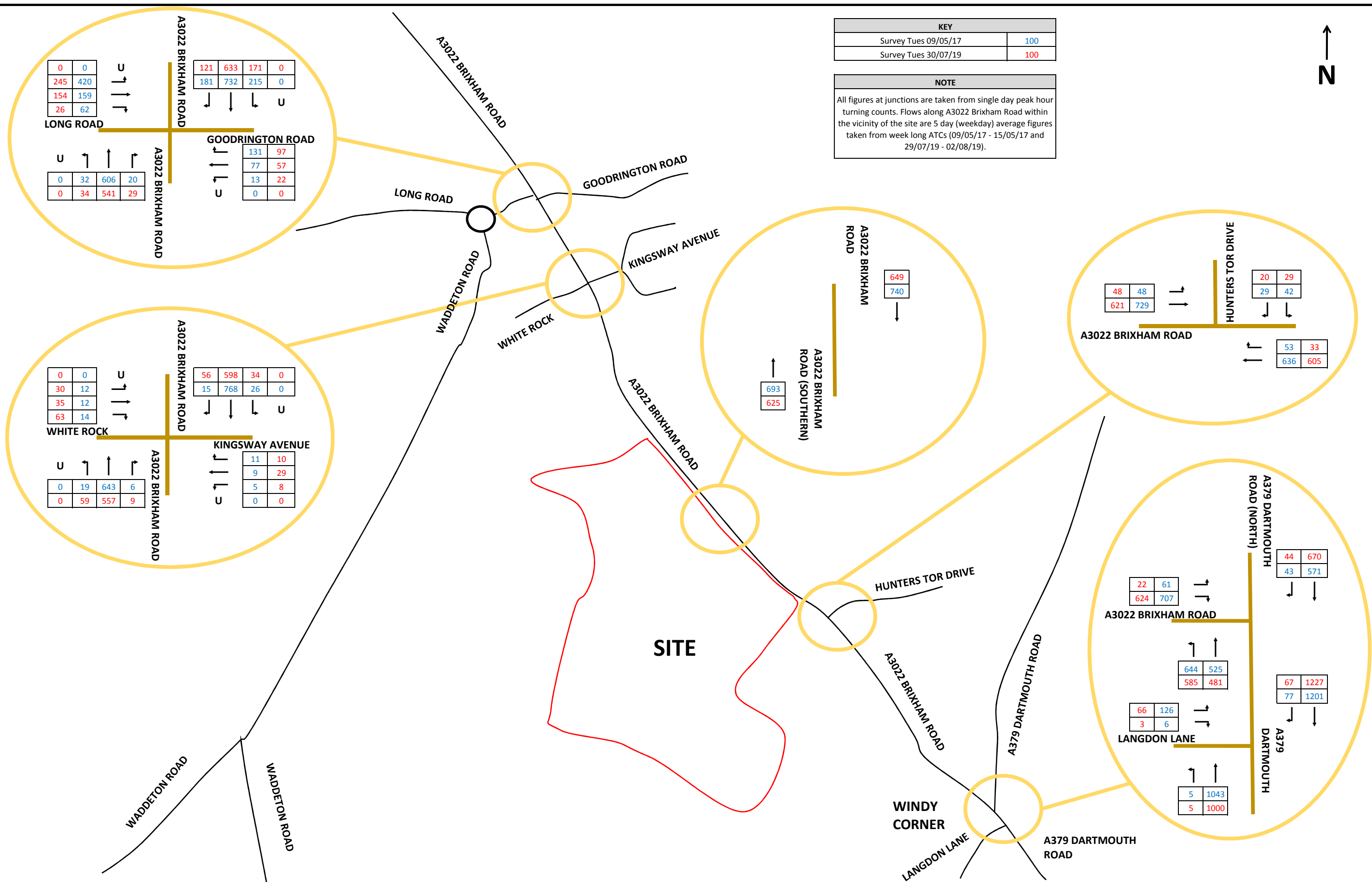


BASE AM PEAK HOUR 2017 AND 2019 FLOWS BASED ON TRAFFIC COUNTS 08:00 to 09:00	Project	checked	date	26 Berkeley Square Bristol, BS8 1HP 0117 920 9430
	INGLEWOOD	DRK	13/8/19	
	Client	Produced	name	Rev
	Abacus Projects LTD/ Deeley Freed Estates	SLF	FIGURE TN6-1	



KEY	
Survey Tues 09/05/17	100
Survey Tues 30/07/19	100

NOTE
 All figures at junctions are taken from single day peak hour turning counts. Flows along A3022 Brixham Road within the vicinity of the site are 5 day (weekday) average figures taken from week long ATCs (09/05/17 - 15/05/17 and 29/07/19 - 02/08/19).

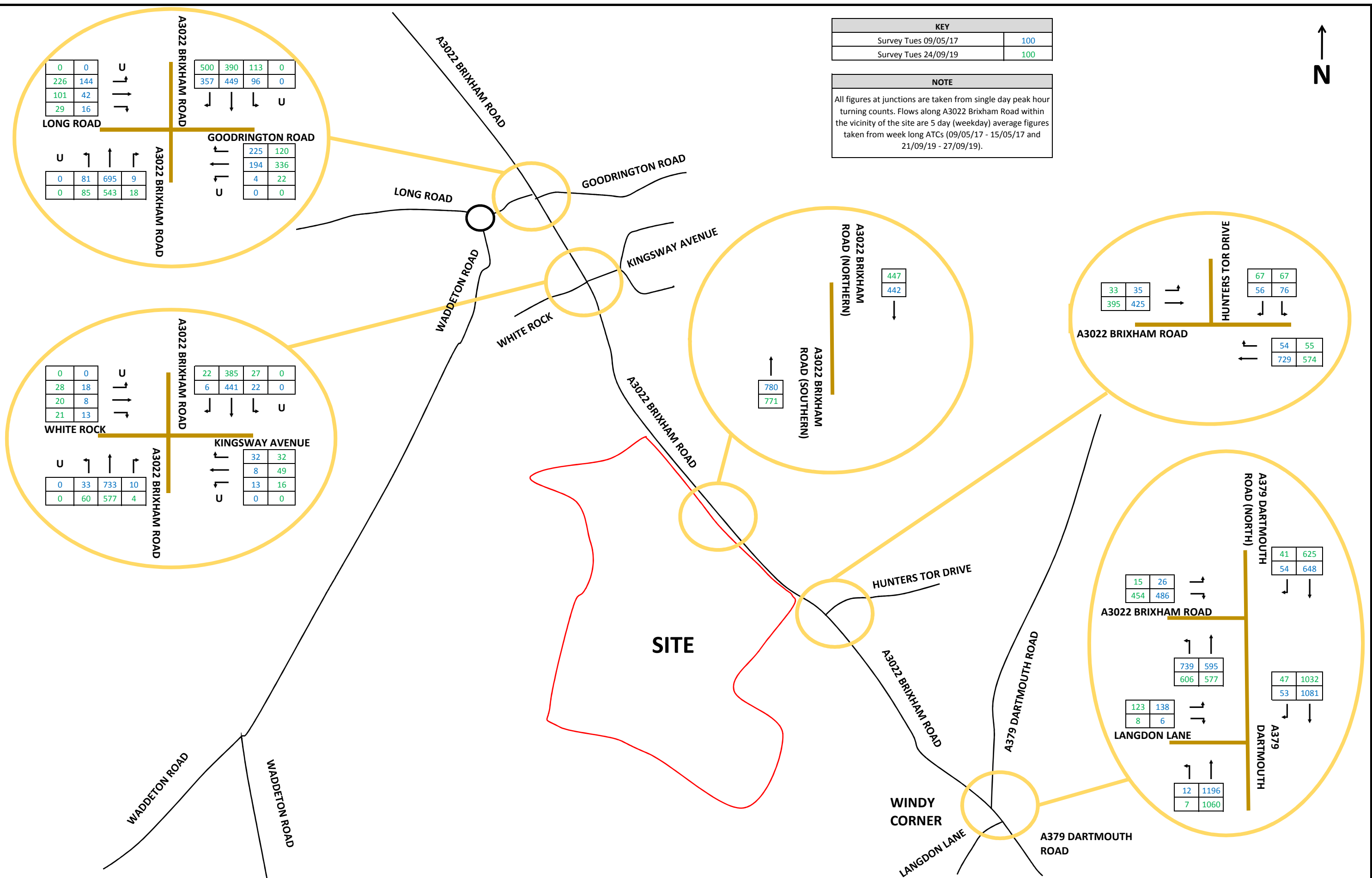


BASE PM PEAK HOUR 2017 AND 2019 FLOWS BASED ON TRAFFIC COUNTS 16:00 to 17:00	Project	checked	date	26 Berkeley Square Bristol, BS8 1HP 0117 920 9430
	Client	Produced	name	
	INGLEWOOD	DRK	13/8/19	
	Abacus Projects LTD/ Deeley Freed Estates	SLF		Rev
				FIGURE TN6-2



KEY	
Survey Tues 09/05/17	100
Survey Tues 24/09/19	100

NOTE
 All figures at junctions are taken from single day peak hour turning counts. Flows along A3022 Brixham Road within the vicinity of the site are 5 day (weekday) average figures taken from week long ATCs (09/05/17 - 15/05/17 and 21/09/19 - 27/09/19).

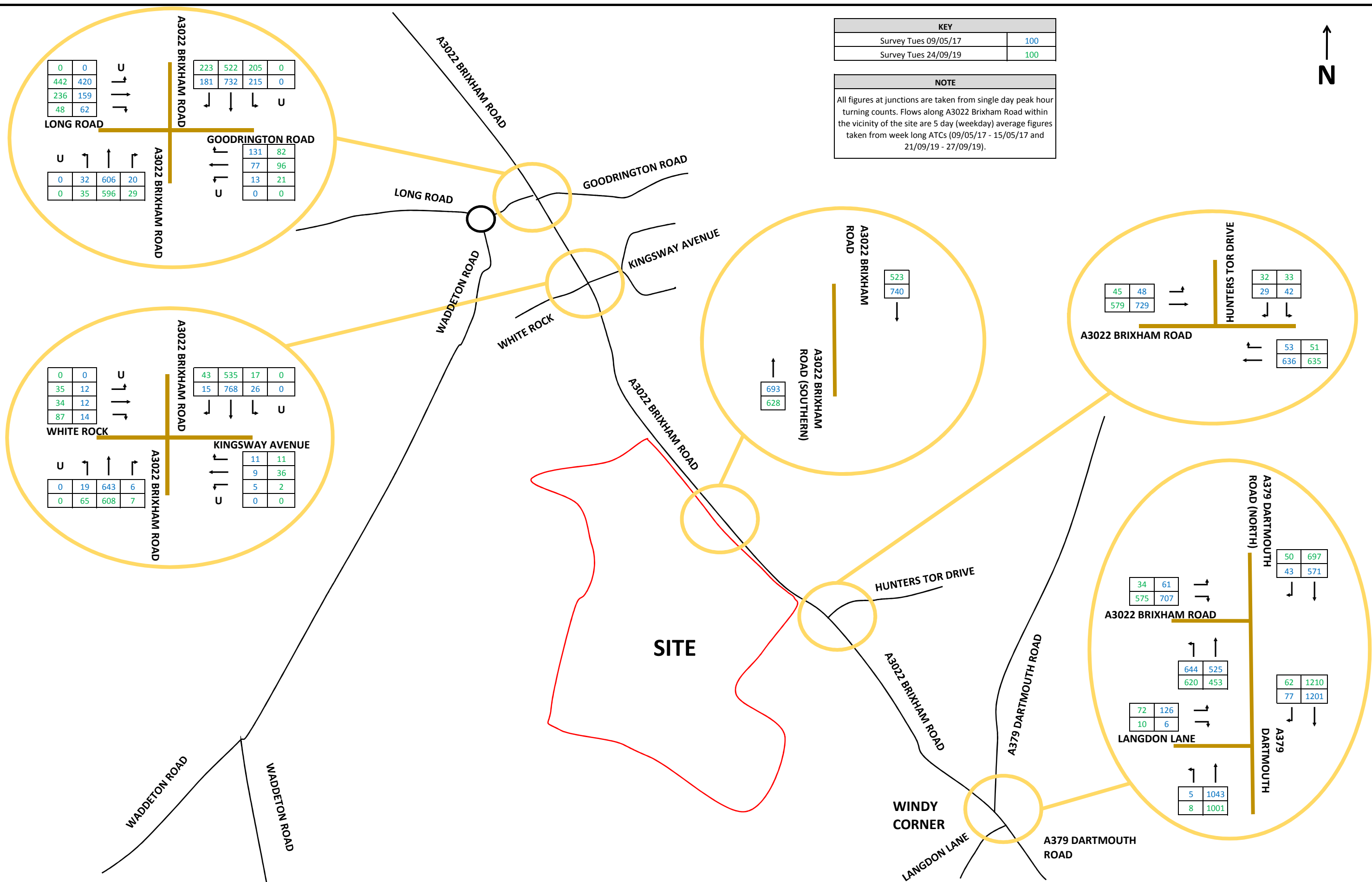


BASE AM PEAK HOUR MAY 2017 AND SEPT 2019 FLOWS BASED ON TRAFFIC COUNTS 08:00 to 09:00	Project	checked	date	26 Berkeley Square Bristol, BS8 1HP 0117 920 9430
	INGLEWOOD	DRK	3/10/19	
	Client	Produced	name	Rev
	Abacus Projects LTD/ Deeley Freed Estates	SLF	FIGURE TN6-3	



KEY	
Survey Tues 09/05/17	100
Survey Tues 24/09/19	100

NOTE
 All figures at junctions are taken from single day peak hour turning counts. Flows along A3022 Brixham Road within the vicinity of the site are 5 day (weekday) average figures taken from week long ATCs (09/05/17 - 15/05/17 and 21/09/19 - 27/09/19).



LONG ROAD

0	0
442	420
236	159
48	62

GOODRINGTON ROAD

223	522	205	0
181	732	215	0

WHITE ROCK

0	0
35	12
34	12
87	14

KINGSWAY AVENUE

43	535	17	0
15	768	26	0

A3022 BRIXHAM ROAD (SOUTHERN)

693
628

HUNTERS TOR DRIVE

45	48
579	729

32	33
29	42

53	51
636	635

A379 DARTMOUTH ROAD (NORTH)

50	697
43	571

34	61
575	707


644	525
620	453

72	126
10	6

5	1043
8	1001

62	1210
77	1201

**BASE PM PEAK HOUR MAY 2017 AND SEPT 2019 FLOWS
 BASED ON TRAFFIC COUNTS 16:00 TO 17:00**

Project	INGLEWOOD	checked	DRK	date	3/10/19	 26 Berkeley Square Bristol, BS8 1HP 0117 920 9430
Client	Abacus Projects LTD/ Deeley Freed Estates	Produced	SLF	name	FIGURE TN6-4	