

Highgate*Transportation*

Pagham South

**Proposed Residential Development and Community Hub
Pagham Road, Pagham**

**Cumulative Impact Arising from Possible Development at
Hook Lane and Sefter Road**

**Addendum Transport Assessment
(ATA/01)**

December 2016

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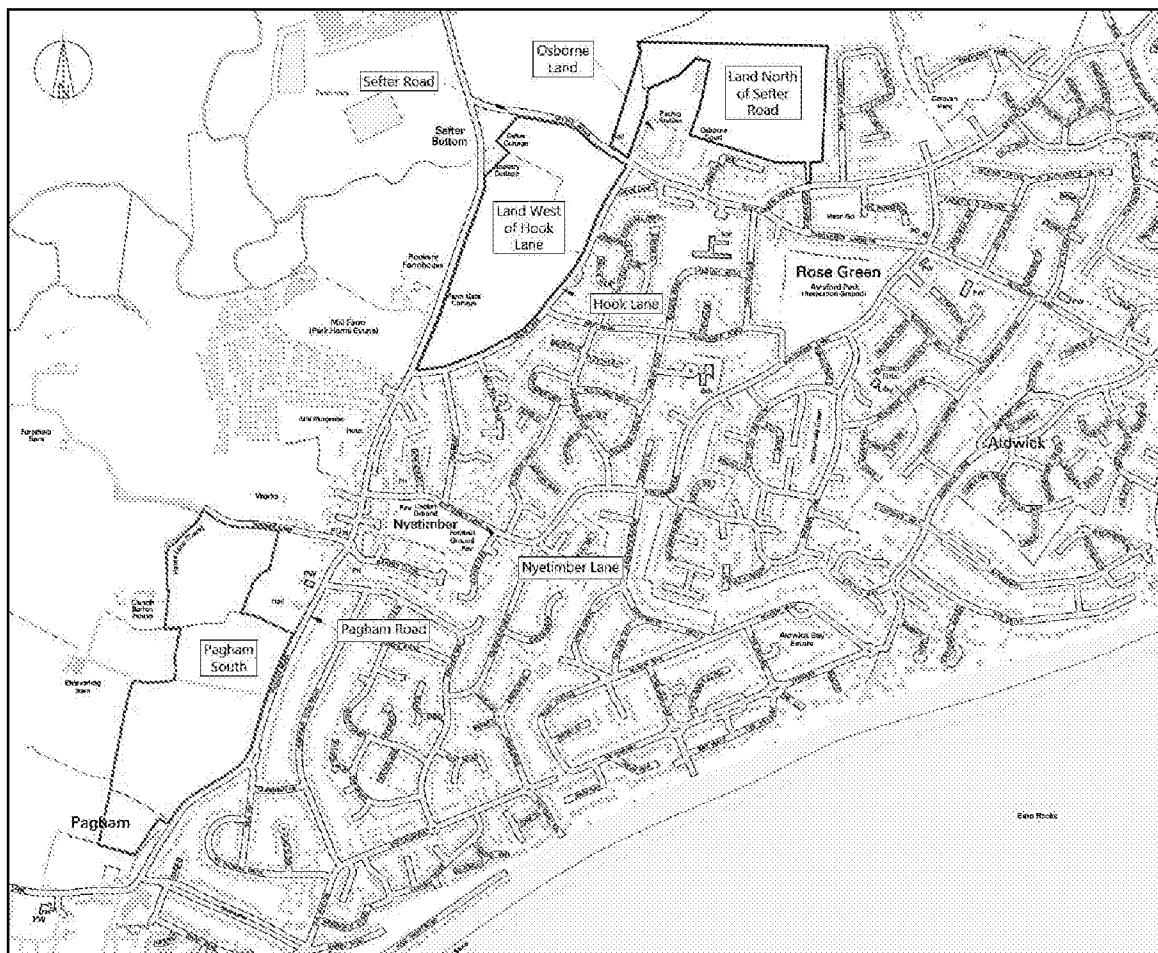
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1.0 Introduction

- 1.1 Highgate Transportation Limited have been appointed by Hanbury PM Ltd to carry out the transport assessment work to support their planning application for residential development and creation of a community hub on land at Pagham South and which lies to west of Pagham Road. The planning application is submitted in outline with all matters reserved except for access.
- 1.2 The transport assessment work has been prepared as two freestanding reports. Report TA/01 should be read first as it considers the development impact arising from the proposals at Pagham South. TA/01 is referred to as the Transport Assessment and sets out all the technical detail such as trip rates, trip distribution and assignment, background traffic flows and committed development that will also be relied on in this addendum study. It should be noted that TA/01 concluded that:
 - i. The proposed site access junctions can be provided with sufficient junction visibility and capacity, and are suitable for all users.
 - ii. The masterplan demonstrates the new development is permeable for pedestrians and cyclists, and has good connectivity to the surrounding transport network.
 - iii. The impact of the Pagham South development on the local highway network is not severe, and is able to be accommodated.
 - iv. It is considered that the Travel Plan measures proposed to support the development are suitable, and will help to improve sustainability of the site by encouraging new and existing residents to walk, cycle and reduce car miles travelled.
 - v. This study confirms that no further mitigation measures are required.
 - vi. This Transport Assessment concludes that there are no transport related reasons why the development at Pagham South should be refused planning permission.
- 1.3 This is the second report (ATA/01), it is referred to as the Addendum Transport Assessment and should be considered as a continuation of TA/01. As such, it will typically not repeat the work of TA/01, but will include references (paragraph numbers, figures and appendices) from that report where appropriate. This report takes account of the cumulative impact arising if the residential development proposed at the two other Pagham sites identified in the emerging Local Plan (Sefter Road and Hook Lane) come forward, as well as a smaller development on part of the Osborne land adjacent to the Sefter Road site.
- 1.4 Arun District Council have requested this cumulative study approach from each developer team as a means of assessing impact, as they have no other way of quantifying this at present nor do they have a CIL in place as a mechanism to fund possible mitigation by means of a levy.
- 1.5 In summary, each development site proposes the following:
 - i. Pagham South – up to 400 residential dwellings, a 2000sqm GFA local centre including a 500 sqm GFA convenience store, a 70 bed care home and a single

- form entry primary school. Vehicular access is via two new priority junctions onto Pagham Road.
- ii. Hook Lane – up to 300 residential dwellings and an 80 bed care home. The proposal includes the option of accommodating a two form entry primary school instead of some of the housing. Vehicular access is from three new priority junctions – one onto Pagham Road and two onto Hook Lane.
 - iii. Sefter Road – up to 280 dwellings and a single form entry primary school. Vehicular access from a new priority junction onto Sefter Road.
 - iv. Sefter Road – additional 60 dwellings.
- 1.6 It should be noted that for the purposes of the traffic assessments, the land off Hook Lane has been assessed with 300 houses and an 80-bed care home as this scenario presents the highest trip generation and is therefore considered to be a robust approach. If the primary school was to be built this would replace a proportion of the proposed dwellings.
- 1.7 The locations of the Pagham South, Sefter Road and Hook Lane sites are shown in **Figure 1.1** from TA/01, which is reproduced below for ease of reference.

Figure 1.1 – Pagham South, Hook Lane and Sefter Road site locations



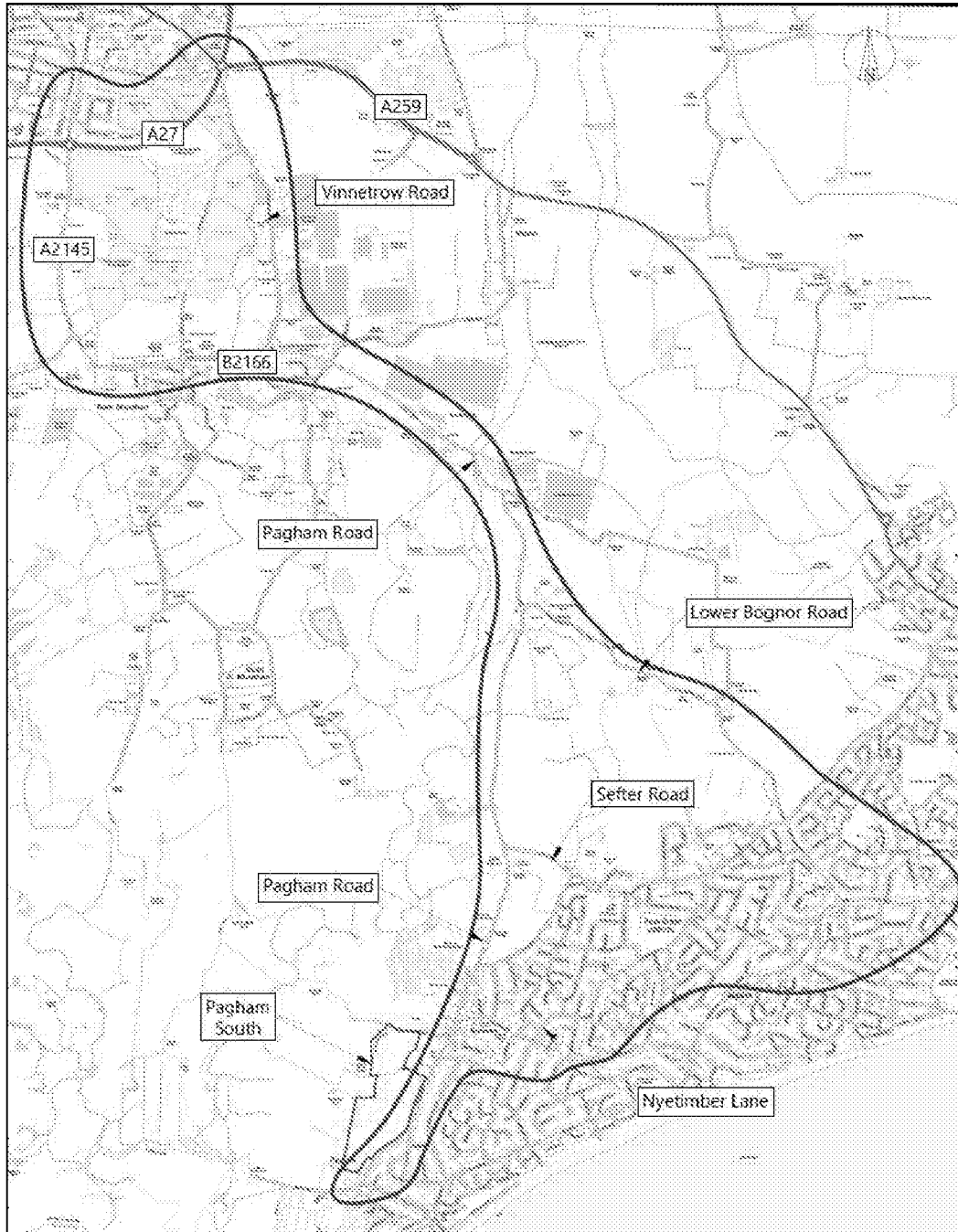
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- 1.8 Pre-application discussions have taken place between the highway consultants of each of the three development teams to agree a joint approach to the parameters to be used. For the avoidance of doubt these are the parameters used in TA/01.
- 1.9 Pre-application discussions have subsequently taken place with highway officers at West Sussex County Council and at Highways England which has resulted in agreement to this joint approach and the parameters to be used.

2.0 Enlarged Study Area and Assessment Parameters

2.1 The enlarged study area is shown in **Figure 2.1** below.

Figure 2.1 - The enlarged study area



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2.2 Compared with TA/01 the study area now includes the following locations:

- i. Lower Bognor Road junction with Charlcroft Lane and Hewarts Lane.
- ii. Lower Bognor Road junction with Aldwick Road and Aldwick Fields.
- iii. B2166 Aldwick Road junction with West Meads Drive and Hawthorne Road.
- iv. Nyetimber Lane junction with Cardinal's Drive.

2.3 Traffic flow data from these locations has also been agreed and is contained in **Appendix 1** and turning flow diagrams for each junction are contained in **Appendix 2**.

2.4 Other parameters agreed include:

- i. Committed developments - These are set out in **paragraph 7.4** of TA/01.
- ii. Assessment Years – 2022 and 2027.
- iii. Growth rates and where to be applied – These are set out in **Section 7.0** of TA/01 and **Section 5.0** of this report.
- iv. Trip rates for each use and the amount of development trips external to Pagham – These are set out in **Section 6.0** of TA/01 and considered in more detail in **Section 3.0** of this report.
- v. Trip distribution – This is set out in **Section 6.0** and **Section 9.0** of TA/01 and is considered in more detail in **Section 4.0** of this report.
- vi. Modelling parameters – This is discussed in **Section 7.0** of this report.

3.0 Trip Generation

- 3.1 The trip generation parameters for Pagham South are set out **Table 6.1** of TA/01. It has been agreed with WSCC and HE that they are suitable for use in the cumulative assessment. For ease of reference the trip rates for each land use are summarised in **Table 3.1** below.

Table 3.1 – Vehicular trip rates

Land Use	Units	Trip Rates (per unit)			
		AM Peak Hour		PM Peak Hour	
		Arrival	Departure	Arrival	Departure
Proposed Houses	/unit	0.144	0.359	0.299	0.179
Care Home	/bed	0.071	0.045	0.071	0.115
Primary School – (210 pupils)	/Pupil	0.267	0.195	0.071	0.076
Convenience Store	/100sqm GFA	8.382	7.666	11.415	10.826
Local Centre	/100sqm GFA	4.074	3.519	3.333	5.926

- 3.2 Where the land use is included the above trip rates have been applied to all four development sites that form the cumulative impact assessment to identify the forecast vehicle trips arising from the proposed land uses, which is summarised in **Table 3.2** below.

Table 3.2 – Vehicular trip assessment

Site	Units	Vehicular Trips Summary			
		AM Peak Hour		PM Peak Hour	
		Arrival	Departure	Arrival	Departure
Pagham South	400 dwellings	58	144	120	71
	70-bed care home	5	3	5	8
	1-form entry primary school	56	41	15	16
	Local Centre	103	91	107	143
<i>Total</i>		<i>245</i>	<i>302</i>	<i>289</i>	<i>256</i>
Land off Hook Lane	300 dwellings	43	108	90	54
	80-bed care home	6	4	6	9
<i>Total</i>		<i>49</i>	<i>112</i>	<i>96</i>	<i>63</i>
Land N of Sefter Road (TW)	280 dwellings	40	101*	84	50
	1-form entry primary school	56	41	15	16
Land N of Sefter Road (Osborne)	60 dwellings	9	22*	18	11
<i>Total</i>		<i>105</i>	<i>163*</i>	<i>117</i>	<i>77</i>

*Adjustment for rounding

- 3.3 TA/01 sets out the level of trip containment within the Pagham South site in terms of trips associated with the proposed primary school and the local centre (see **Table 6.2** and **Table 6.3** of TA/01).
- 3.4 The assessment of the traffic associated with the proposed primary school on land north of Sefter Road also accounts for an equivalent level of containment, which has also been agreed with highway officers. Therefore overall trip numbers to be added to the next work for assessment are summarised in **Table 3.3** below.

Table 3.4 – Vehicular trip generation summary

Site	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Arrival	Departure	Arrival	Departure
Pagham South	187	251	226	211
Hook Lane	49	112	96	63
Land North of Sefton Road	86	124	112	72
<i>Total</i>	<i>322</i>	<i>487</i>	<i>434</i>	<i>346</i>

- 3.5 From this it can be seen that the combined level of development traffic is expected to be in the order of around 800 vehicles in each peak hour.

4.0 Trip Distribution

- 4.1 The trip distribution for this Addendum TA is based the parameters agreed and set out during the scoping and pre-application stages. The Pagham South development traffic has been distributed as per the methodology set out in **Section 6.0** of TA/01. The development distribution for the Hook Lane site has been provided by the transport consultant RPS, based on the agreed joint methodology and their site location.
- 4.2 Similarly the development distribution for the larger of the two sites on land north of Sefter Road has been provided by the transport consultant C&A, based on the agreed joint methodology and their site location. This report assumes that the trip distribution for the adjoining site of up to 60 dwellings should be based on the same parameters as the adjacent larger site.
- 4.3 The flow distribution diagrams for each individual site are contained in **Appendix 3** supported by percentage distribution flow diagrams that are contained in **Appendix 4** where these have been made available.
- 4.4 **Section 9.0** of TA/01 sets out the trip distribution of the wider area and is set out below for ease of reference.
- 4.5 The wider trip distribution for the residential element can be summarised as follows:
- i. B2166 50%
 - ii. Nyetimber Lane 25%
 - iii. Hook Lane 25%
 - iv. Sefter Road East 20%
 - v. Gossamer Lane 20%
- 4.6 The wider trip distribution for the retail element can be summarised as follows:
- i. Pagham Road south of Nyetimber Lane 21.5%
 - ii. Nyetimber Lane 40%
 - iii. Hook Lane 38.5%
 - iv. Sefter Road East 19%
 - v. Gossamer Lane 21%
- 4.7 The wider trip distribution for the primary school element can be summarised is as follows:
- i. South on Pagham Road 12.4%
 - ii. Nyetimber Lane 56.4%
 - iii. Hook Lane 20.2%
 - iv. Sefter Road East 9.9%
 - v. Gossamer Lane 22.8%
- 4.8 Traffic flow diagrams for each of the development sites are contained in **Appendix 5** for reference.

5.0 Forecast Traffic Flows

- 5.1 A growth factor has been applied to the peak hour traffic flow survey information to forecast traffic in 2017, 2022 and 2027, using the industry standard TEMPRO program with NTEM adjustment factors.
- 5.2 The growth rates from the TEMPRO programme are set out below in **Table 5.1** and the data is contained in **Appendix 6** for reference.

Table 5.1 – Growth rates

	Road Type	Growth Rate
2016-2017		
AM Peak	Principal Roads	1.0164
	Trunk Roads	1.0167
PM Peak	Principal Roads	1.0164
	Trunk Roads	1.0167
2016-2022		
AM Peak	Principal Roads	1.0976
	Trunk Roads	1.1022
PM Peak	Principal Roads	1.0981
	Trunk Roads	1.1027
2016-2027		
AM Peak	Principal Roads	1.1618
	Trunk Roads	1.1717
PM Peak	Principal Roads	1.1638
	Trunk Roads	1.1737

- 5.3 TEMPRO includes for additional households and jobs as part of the above growth. The housing proposed is likely to be in the region of 1,040 dwellings, plus employment, as such, in order to avoid overestimating the increase in the local area and double counting of trips, it is proposed that for this combined assessment only part of the growth is applied.
- 5.4 The growth therefore needs to include further adjustments to the assumptions used in TEMPRO to discount the level of housing proposed and the committed developments in Pagham Land at Summer Lane (90 dwellings, ref: P/58/15) and 251 Pagham Road (40 dwellings, ref: P/125/14), as set out in **Section 7.0** of TA/01 (a further 130 dwellings). For the purposes of this report the reduction in growth rates would apply to the local area but not the A27 trunk road, where the full growth will be applied.
- 5.5 Estimated build-out and occupation rates based on all committed and proposed development sites coming forward are set out in **Table 5.2** below. This assumes that the two committed schemes (detailed in **Paragraph 5.4** above) will be occupied in 2018.

Table 5.2 – Estimated occupation rate

	Year									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Annual Build Rate	180	125	125	125	125	125	125	100	75	65
Cumulative Total	180	305	430	555	680	805	930	1,030	1,105	1,170

5.6 Therefore, in the assessment year of 2022, there could be up to around 680 new houses occupied in Pagham with all 1,170 houses occupied by 2027.

5.7 From an analysis of the TEMPRO programmes, it can be seen that 337 additional homes have been already accounted for between 2016 and 2022, with 560 additional houses in total between 2016 and 2027. Therefore, in consideration of **Table 5.2** above, it is appropriate to strip out these housing assumptions from the growth adjustment figures.

5.8 By reducing the forecast housing supply already accounted for in TEMPRO provides the following adjusted growth rates for use on the road network within and surrounding Pagham (data also contained in **Appendix 6**) using Urban Principal roads (Arun 019):

- i. 2022 AM 1.0553
- ii. 2022 PM 1.0495
- iii. 2027 AM 1.0902
- iv. 2027 PM 1.0814

5.9 The future year traffic flow diagrams are included in **Appendix 7**, which include the two committed sites within the base flow as per TA/01. The future year plus development flow diagrams (in **Appendix 5**) are also contained in **Appendix 7** for reference.

6.0 Impact Appraisal – Local Highway Network To Pagham South

6.1 The highway capacity of the proposed site access junctions for Pagham South have been assessed using PICADY software and the results are contained in **Appendix 8** and summarised for each junction in **Tables 8.1** and **8.2** below for a future year of 2022, and **Tables 8.3** and **8.4** below for a future year of 2027. All scenarios take into account committed developments and the other promoted developments in Pagham as set out in **Paragraph 1.3**.

Table 8.1 – Northern Site Access ‘With Development’ PICADY results 2022

Arm	AM Peak (0800-0900)			PM Peak (1700-1800)		
	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)
Site Access	0.31	1	9	0.34	1	10
Pagham Road	0.16	0	6	0.17	0	6

Table 8.2 – Southern Site Access ‘With Development’ PICADY results 2022

Arm	AM Peak (0800-0900)			PM Peak (1700-1800)		
	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)
Site Access	0.14	0	7	0.07	0	6
Pagham Road	0.06	0	6	0.11	0	6

Table 8.3 – Northern Site Access ‘With Development’ PICADY results 2027

Arm	AM Peak (0800-0900)			PM Peak (1700-1800)		
	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)
Site Access	0.32	1	9	0.34	1	10
Pagham Road	0.16	0	6	0.17	0	6

Table 8.4 – Southern Site Access ‘With Development’ PICADY results 2027

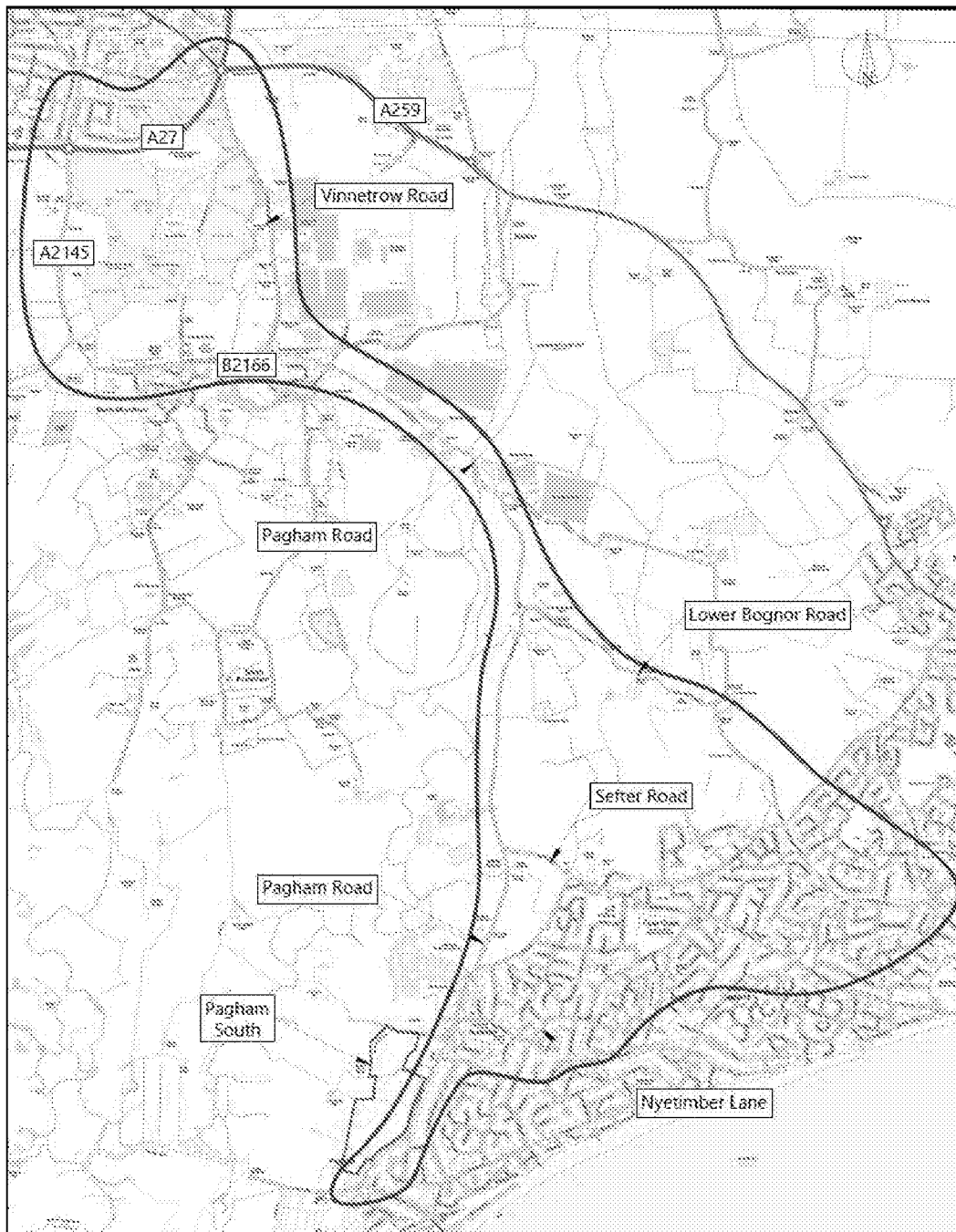
Arm	AM Peak (0800-0900)			PM Peak (1700-1800)		
	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)
Site Access	0.14	0	7	0.07	0	6
Pagham Road	0.06	0	6	0.11	0	6

6.2 These tables show that both of the proposed site access junctions work well within capacity in the future assessment years of 2022 and 2027.

7.0 Impact Appraisal – Wider Highway Network

- 7.1 This section of the study considers the impact arising on the wider highway network identified within the study area shown in **Figure 2.1** which is replicated below for ease of reference.

Figure 2.1 – The study area



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- 7.2 The trip distribution and generation figures discussed in **Section 4.0** and **Section 5.0** are provided as flow diagrams for the wider area in **Appendix 6**. The two committed development schemes have been added onto the base traffic flows post application of growth rates.
- 7.3 The wider area modelling of existing junctions will include for the following scenarios for both the AM and PM peak periods:
- i. 2017 no development
 - ii. 2022 no development
 - iii. 2022 with all development
 - iv. 2027 no development
 - v. 2027 with all development
- 7.4 Further to Paragraph 7.2 above, the base traffic flows in 2017, 2022 and 2027 include for the two committed development sites.
- 7.5 Therefore junction modelling has been carried out in the respective modelling programmes, PICADY, ARCADY (both Junctions 9) and LINSIG (version 3), and the results are tabulated below in **Table 7.1** and **Table 7.2** for future years of 2022 and 2027 respectively. The modelling reports are contained in **Appendix 8** for reference.

Table 7.1 – Junction modelling results 2022

Junction	Test Scenario	AM Peak (0800-0900)			PM Peak (1700-1800)		
		RFC (%)	Queue (Veh)	Delay (s)	RFC (%)	Queue (Veh)	Delay (s)
PICADY							
Pagham Road j/w Nyetimber Lane	2022	0.21	0	9	0.35	1	13
	2022 + Dev.	0.34	1	11	0.54	1	20
	Difference	+0.13	+1	+2	+0.19	0	+7
Pagham Road j/w Hook Lane	2022	0.41	1	12	0.44	1	11
	2022 + Dev.	0.53	1	15	0.58	1	15
	Difference	+0.12	0	+3	+0.14	0	+4
Pagham Road j/w Sefter Road	2022	0.63	2	23	0.38	1	15
	2022 + Dev.	0.93	8	88	0.53	1	23
	Difference	+0.30	+6	+65	+0.15	0	+8
B2166 j/w Lower Bognor Road	2022	1.05	21	179	0.83	4	64
	2022 + Dev.	1.23	46	396	1.05	14	206
	Difference	+0.18	+25	+217	+0.22	+10	+142
ARCADY							
B2166 j/w Vinnetrow Road	2022	0.68	2	4	0.77	3	20
	2022 + Dev.	0.81	4	13	0.89	7	40
	Difference	+0.13	+2	+9	+0.12	+4	+20
B2166 J/W B2145	2022	0.75	3	10	0.77	3	11
	2022 + Dev.	0.86	6	18	0.85	6	18
	Difference	+11	+3	+8	+8	+3	+7
LINSIG							
Nyetimber Lane j/w Grosvenor Gds	2022	0.89	11	60	0.77	10	43
	2022 + Dev.	1.03	24	144	1.13	51	283
	Difference	+0.14	+13	+84	+0.36	+41	+240

7.6 It can be seen from the above that:

- i. Nyetimber Lane junction with Pagham Road will continue to work well within capacity in the future year of 2022 with the addition of all the promoted sites.
- ii. The Hook Lane junction with Pagham Road will continue to work well within capacity in the future year of 2022 with the addition of all the promoted sites.
- iii. The Sefter Road junction with Pagham Lane will reach a capacity level of 93% in the AM peak hour in 2022 with the addition of all the promoted sites, but continue to work well within capacity in the PM peak hour.
- iv. The Lower Bognor Road junction with the B2166 will operate over capacity in 2022, even in a without-development scenario, and that with all the promoted development's traffic added on the junction will experience lengthy queues of around 46 vehicles in the AM peak hour.
- v. B2166 junction with Vinnetrov Road will operate within capacity in the 2022 AM peak hour with the addition of the promoted sites, and will reach 85% capacity level in the PM peak hour with all the promoted sites.

- vi. The B2166 junction with the B2145 will continue to operate within capacity during the AM and PM peak hours in 2022, with and without the promoted sites.
- vii. Nyetimber Lane junction with Grosvenor Gardens signalised junction will reach capacity in the future year of 2022. Furthermore, it can be seen that with the trips arising from all the promoted schemes this will push the operation of the junction over capacity at 103% and 113% in the AM and PM peak hours respectively.

Table 7.2 – Junction modelling results 2027

Junction	Test Scenario	AM Peak (0800-0900)			PM Peak (1700-1800)		
		RFC (%)	Queue (Veh)	Delay (s)	RFC (%)	Queue (Veh)	Delay (s)
PICADY							
Pagham Road j/w Nyetimber Lane	2027	0.21	0	9	0.37	1	14
	2027 + Dev.	0.35	1	11	0.57	1	22
	Difference	+0.14	+1	+2	+0.20	0	+8
Pagham Road j/w Hook Lane	2027	0.42	1	12	0.46	1	11
	2027 + Dev.	0.55	1	16	0.59	1	16
	Difference	+0.13	0	+4	+0.13	0	+5
Pagham Road j/w Sefter Road	2027	0.66	2	24	0.39	1	15
	2027 + Dev.	0.96	10	107	0.55	1	24
	Difference	+0.30	+8	+83	+0.16	0	+9
B2166 j/w Lower Bognor Road	2027	1.10	29	233	0.88	5	81
	2027 + Dev.	1.29	56	515	1.12	20	275
	Difference	+0.19	+27	+282	+0.24	+15	+194
ARCADY							
B2166 j/w Vinnetrow Road	2027	0.70	2	8	0.78	4	24
	2027 + Dev.	0.84	5	25	0.91	9	55
	Difference	+0.14	+3	+17	+0.13	+5	+31
B2166 J/W B2145	2027	0.78	4	12	0.80	4	13
	2027 + Dev.	0.89	8	23	0.88	7	21
	Difference	+11	+4	+11	+0.8	+3	+8
LINSIG							
Nyetimber Lane j/w Grosvenor Gds	2027	1.31	70	520	1.06	15	192
	2027 + Dev.	1.44	94	648	1.60	131	775
	Difference	+0.13	+24	+128	+0.54	+116	+583

7.7 It can be seen from the above that:

- i. Nyetimber Lane junction with Pagham Road will continue to work well within capacity in the future year of 2027 with the addition of all the promoted sites.
- ii. The Hook Lane junction with Pagham Road will continue to work well within capacity in the future year of 2027 with the addition of all the promoted sites.
- iii. The Sefter Road junction with Pagham Lane will reach a capacity level of 96% in the AM peak hour in 2027 with the addition of all the promoted sites, but continue to work well within capacity in the PM peak hour.

- iv. The Lower Bognor Road junction with the B2166 will operate over capacity in 2027 with and without the traffic arising from the promoted sites.
 - v. B2166 junction with Vinnetrow Road will continue to operate within capacity during the AM peak hour in 2027, but will reach 91% capacity level in the PM peak hour with all the development traffic.
 - vi. The B2166 junction with the B2145 will continue to operate within capacity during the AM and PM peak hours in 2027.
 - vii. The Nyetimber Lane signalised junction with Grosvenor Gardens is shown to be over capacity in the future year of 2027 with and without the addition of the promoted sites.
- 7.8 The cumulative impact is showing some of the junctions close to or above operating capacity. Usually it is the minor arm of the junction that is affected e.g. because Pagham Rd is carrying more development traffic, drivers on the side arm experience more delay and it is this arm that is now forecast to be running close to or above 100% capacity at certain times. In reality many of the existing drivers on the side roads will have a choice of routes to take and will no longer appear on a specific side arm if that arm is now more congested than an alternative route.

8.0 Arun District Council Approach to Mitigation

Trunk Road Network (A27 Chichester Bypass)

- 8.1 Officers at Arun District Council have indicated that they are considering seeking mitigation of transport and highway impact on the A27 Chichester Bypass based on charging a levy. They have suggested that this could be similar to what is set out in the SPD (Planning Obligations and Affordable Housing) published by Chichester District Council in July 2016. Therefore it is appropriate to note that the following AM peak hour vehicular trips are forecast to arrive and depart via the A27 junctions during the peak hours as set out in **Table 8.1** below.

Table 8.1 – Cumulative impact on A27 – AM peak hour residential trips

Pagham South	Hook Lane	Land North of Sefter Road (including Osborne land)
103vph	83vph	87vph

County Highway Network

- 8.2 The Chichester SPD envisages mitigation for county highway network being achieved via Travel Plans and, where practical, via highway works rather than via a levy. Arun District Council officers have confirmed that they would wish to take a similar approach with county roads.

9.0 Summary and Conclusions

- 9.1 Highgate Transportation Limited have been appointed by Hanbury PM Ltd to carry out the transport assessment work to support their planning application for residential development and creation of a community hub on land at Pagham South and which lies to west of Pagham Road.
- 9.2 This Addendum Transport Assessment takes account of the cumulative impact arising if the residential development proposed at the two other Pagham sites identified in the emerging Local Plan (Sefter Road and Hook Lane) come forward, as well as a smaller development on part of the Osborne land adjacent to the Sefter Road site. For the purposes of this assessment each site proposes the following:
- i. Pagham South – up to 400 residential dwellings, a 2000sqm GFA local centre including a 500 sqm GFA convenience store, a 70 bed care home and a single form entry primary school. Vehicular access is via two new priority junctions onto Pagham Road.
 - ii. Hook Lane – up to 300 residential dwellings and an 80 bed care home. Vehicular access is from three new priority junctions – one onto Pagham Road and two onto Hook Lane.
 - iii. Sefter Road – up to 280 dwellings and a single form entry primary school. Vehicular access from a new priority junction onto Sefter Road.
 - iv. Sefter Road – additional 60 dwellings.
- 9.3 Pre-application discussions have taken place between the highway consultants of each of the three development teams to agree a joint approach to the parameters to be used in each assessment. Discussions have also taken place with highway officers at West Sussex County Council (in respect of local roads) and at Highways England (in respect of the Chichester Bypass) based on this joint approach to agree the scope of the cumulative assessment study that each developer has agreed to carry out.
- 9.4 Assessment years of 2022 and 2027 have been agreed with highway officers at WSCC and HE and impact assessments carried out accordingly.
- 9.5 Officers at Arun District Council have indicated that they are considering seeking mitigation of transport and highway impact on the A27 Chichester Bypass based on charging a levy. For county roads they envisage mitigation being achieved via Travel Plans and, if practical, local works rather than via a levy.
- 9.6 This cumulative impact assessment study concludes that with all the promoted sites in place:
- i. Pagham South – Both proposed site access junctions are forecast to work well within capacity in 2027.
 - ii. Nyetimber Lane junction with Pagham Road will continue to work well within capacity in the future year of 2027 with the addition of all the promoted sites.
 - iii. The Hook Lane junction with Pagham Road will continue to work well within capacity in the future year of 2027 with the addition of all the promoted sites.

- iv. The Sefter Road junction with Pagham Lane will reach a capacity level of 96% in the AM peak hour in 2027 with the addition of all the promoted sites, but continue to work well within capacity in the PM peak hour.
 - v. The Lower Bognor Road junction with the B2166 will operate over capacity in 2027 with and without the traffic arising from the promoted sites.
 - vi. B2166 junction with Vinnetrow Road will continue to operate within capacity during the AM peak hour in 2027, but will reach 91% capacity level in the PM peak hour with all the development traffic.
 - vii. The B2166 junction with the B2145 will continue to operate within capacity during the AM and PM peak hours in 2027.
 - viii. The Nyetimber Lane signalised junction with Grosvenor Gardens is shown to be over capacity in the future year of 2027 with and without the addition of the promoted sites.
- 9.7 Whilst the cumulative impact is showing some of the junctions close to or above operating capacity, it is usually the minor arm of the junction that is affected e.g. because Pagham Rd is carrying more development traffic, drivers on the side arm experience more delay and it is this arm that is now forecast to be running close to or above 100% capacity at certain times.
- 9.8 It is concluded that many of the existing drivers on the side roads will have a choice of routes to take and will no longer appear on a specific side arm if that arm appears to be more congested than an alternative route.