

Common Statement of Cumulative Assessments

Pagham Residential Developments

1.0 Introduction

- 1.1 This Common Statement of Cumulative Assessments (CSCA) sets out the parameters used for the cumulative transport assessment work carried out on behalf of three of the sites in Pagham that are currently the subject of planning applications submitted to Arun District Council. These are:

Hallam Land – Land North of Hook Lane (P/6/17/OUT) - consultants RPS

Hanbury Properties – Pagham South (P/140/16/OUT) - consultants HTp

Taylor Wimpey – Land North of Seftor Road (P/134/16/OUT) - consultants C&A

- 1.2 Each consultant has carried out a cumulative study of the traffic impact of the three sites on the local and strategic highway network for an agreed future year of 2031. Whilst the reports are standalone documents submitted in support of their respective planning applications, each consultant has shared information and the parameters used and therefore the overall conclusions of each report reflect this joint approach. Inevitably, given the different site locations there are some minor differences in the modelling results and as agreed with highway officers at West Sussex County Council (WSCC) this CSCA has been provided to identify why these differences have occurred, and to summarise the obligations arising from the cumulative assessment work.

- 1.3 The studies confirmed that the following mitigation based on cumulative impact is required on the WSCC highway network:

- i. Nyetimber Lane signalised junction with Grosvenor Gardens and Gossamer Lane – Proposed alterations to signal timings.
- ii. Rose Green Road priority junction with Grosvenor Gardens – An additional exit lane from Rose Green Road.
- iii. Lower Bognor Road junction – A contribution will be made to sustainable transport measures on the wider highway network as development traffic from the Pagham sites will displace existing traffic from this junction to the wider highway network.
- iv. B2166 roundabout junction with Vinnetrow Road – Proposed widening of the entry onto the roundabout from the western B2166 arm.
- v. B2166 roundabout junction with B2145 – Proposed widening of the three approaches to this junction.
- vi. In order to create a cycle link from Pagham to the Pagham Harbour to Chichester cycle route a contribution will be provided to upgrade the surfaces of Footpaths 100, 106 and 104 and convert to bridleways to permit cycling.

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- 1.4 Discussions have also been held with Highways England regarding proposed improvement works at the A27 Whyke Hill junction for the provision of an additional lane for both eastbound and westbound A27 traffic based on the Highways England proposals for signalling this junction. The costs associated with these works for Highways England are set out in a separate document.
- 1.5 The contributions to WSCC are to be based on 980 dwellings, split between the three developers.
- 1.6 WSCC have requested that the three junction mitigation schemes proposed on their highway network are to be provided by the developers. Therefore, the developers have agreed to take a junction each as part of their individual Section 106 contributions package. However, as each junction has a different cost, in order to ensure that no developer is unfairly treated contributions towards the sustainable travel measures would be adjusted as appropriate.
- 1.7 The agreed cumulative contributions to WSCC are set out in **Table 1.1** below and the obligations arising for the three sites are summarised in **Table 1.2**.

Table 1.1 – Cumulative Obligations - Contributions

Contribution Requirement	Value
West Sussex County Council - Contribution to sustainable transport measures on the wider highway network.	£390,000
West Sussex County Council - Additional contribution to off-site sustainable travel for upgrading the surfaces of Footpaths 100, 106 and 104 to bridleways to permit cycling.	£100,000
Total	£490,000

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Table 1.2 – Individual Development Site Obligations

S106 Highway Mitigation	Works or Contribution
Pagham South	
B2166 junction with B2145 proposed widening works to all arms.	Works
Upgrading surface of Footpath 101 (contribution to WSCC).	£65,000
The provision of two site access junctions with Pagham Road, associated pedestrian refuge facilities either side of each access and associated dropped kerbs, 2m wide footways and a new pedestrian crossing over Pagham Road to the immediate north of the Village Hall access.	Works
Provision of a replacement bus stop with layby, shelter, raised kerbs and timetable information.	Works
Land North of Hook Lane	
B2166 junction with Vinnetrow Road widening of western entry arm.	Works
Upgrade of local bus stops on Pagham Road at Hook Lane junction to provide northbound bus stop with raised kerbs and bus timetable information and southbound bus stop with new layby, raised kerbs and timetable information. Upgrade of local bus stops on Hook Lane near Hook Lane Close and on Lodsworth Road to include raised kerbs.	Works
Provision of two new site accesses, one on Hook Lane and one on Pagham Road. Both accesses will include 2m wide footways and associated dropped kerbs. The footway from the northern access on Hook Lane will link to the footway proposed as part of the Land North of Sefter Road site to provide a continued footway link between the two sites.	Works
Land North of Sefter Road	
Rose Green Road priority junction improvement scheme.	Works
Provision of a single all-purpose access to Sefter Road incorporating 2m footways.	Works
Provision of a pedestrian, cycle and emergency access to Rose Green Road.	Works

- 1.8 The breakdown of the contributions and cost of the junction mitigation works for the individual developments is set out in **Tables 7.1, 7.2 and 7.3** at the end of this statement.

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2.0 Description of Submitted Applications

2.1 Each application is described as follows:

P/6/17/OUT – Outline application with some matters reserved for construction of up to 300No. new homes, Care home of up to 80No. beds, D1uses of up to 4000sqm including a 2 form entry Primary School, formation of new means of access onto Hook Lane & Pagham Road, new pedestrian & cycle links, the laying out of open space, new strategic landscaping, habitat creation, drainage features & associated ground works & infrastructure.

P/140/16/OUT – Outline application for access only - mixed use development comprising of up to 400 dwellings, a care home with up to 70 beds, a Local Centre comprising up to 2000sqm of A1/A2/A3/D1/sui generis floor space, provision of land for a 1FE primary school (with sufficient space to ensure that it is expandable to 2FE), provision of land for a scout hut, safeguarding of land to help link the site to the Pagham Harbour Cycle Route & other community uses including public open space & allotments with some matters reserved.

P/134/16/OUT – Outline application for the development of up to 280 dwellings (including affordable homes), land for a replacement scout hut, land for an Ambulance Community Response Post Facility and land for either a 1FE primary school or care home. Provision of a primary vehicular access from Sefter Road and demolition of No. 80 Rose Green Road and creation of a pedestrian and emergency only access. Provision of Public Open Spaces including associated children's play areas, landscaping, drainage and earthworks.

During the application process, Taylor Wimpey modified their application and their consultants C&A have modelled for 280 dwellings in place of the one form entry Primary School.

3.0 Methodology

3.1 This CSCA confirms that whilst there are minor differences in the flows and model parameters used, these do not materially affect any of the consultant's overall conclusions or the mitigation measures proposed. All consultants have worked constructively and collaboratively and this report presents our joint conclusions.

3.2 This statement provides clarification as follows:

- i. Common parameters.
- ii. Why slight differences have arisen within the cumulative assessments.
- iii. Proposed mitigation.
- iv. Conclusions.

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4.0 Common Parameters

- 4.1 At an early stage the three consultants agreed the general approach in conjunction with highway officers.
- 4.2 The cumulative assessments have been based on the standalone transport assessments submitted by each consultant to support the respective planning application. Common parameters are:
- i. Trip Rates – Residential, care home and primary school trip rates were agreed with WSCC and shared.
 - ii. 2016 Base Flows – Generally the same, minor differences based on individual survey results.
 - iii. Future Year Flows – The use of the Arun Saturn Data (as agreed with HE and WSCC) for the junctions north of Lower Bognor Road (inclusive) and the use of surveyed flows with local growth factors for junctions within Pagham.
 - iv. Traffic Models – The models used have been based on each consultant's review of the junctions, any differences are negligible and do not impact on conclusions or need for mitigation arising.
 - v. Committed Development – All three assessments include for the two agreed committed developments (Land at Summer Lane 90 dwellings, ref: P/58/15 and 251 Pagham Road 40 dwellings, ref: P/125/14) and also the background growth used includes an allowance for an additional circa 150 dwellings (90 for Church Barton on land west of Pagham South plus 60 on the Osborne Refrigeration site at Land North of Sefter Road respectively), taking the total number of dwellings proposed in Pagham to circa 1,200 in line with Local Plan Proposed Main Modifications April 2016.
 - vi. A27 Traffic Models – These were provided by the HE and used as instructed.
 - vii. Development Content – The school has been modelled on the Pagham South site with 400 dwellings, 70-bed care home and a local centre; 300 dwellings plus an 80-bed care home on Land North of Hook Road.

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5.0 Why Slight Differences Have Arisen within the Cumulative Assessments

5.1 There are some slight differences between the figures used and these are:

- i. Development Content – HTP and RPS have modelled for 250 dwellings on the Land North of Sefter Road site as per the original description of the Taylor Wimpey planning application (NB development content updated 23rd June 2017). C&A have modelled for 280 dwellings on their site on the local highway network in order to provide a sensitivity test in the event that the other potential on site land uses are not taken forward for development. HTP have also tested the mitigation works for 280 dwellings on Land North of Sefter Road as a sensitivity test.
- ii. Local Traffic Distribution – The distribution of traffic within Pagham itself from each site is determined by each site location for all land uses. This cannot be a 'one-distribution-fits-all' approach.
- iii. Traffic Distribution over the Wider Area – The general distribution of traffic across the wider area i.e. 50% of traffic travelling north to A27 based on journey to work census data (an agreed 10% remaining within Pagham and 40% travelling east to Bognor) has been distributed as per the census destinations as agreed with highway officers. Minor differences arose with C&A distributing 55% travelling north and RPS distributing residential traffic on a pro-rata basis for each junction north of Lower Bognor Road.
- iv. Growth Rates – The Temprow database was updated during the production of the cumulative reports from version 7.1 to version 7.2. Version 7.2 provides lower growth figures for this area of Arun. By the time the new version came out HTP had generally completed their cumulative impact work i.e. based on the slightly higher growth figure. Whereas RPS and C&A allowed for version 7.2 within their assessments. Therefore, it was agreed with WSCC that the use of version 7.1 would be used as a sensitivity test.
- v. Junction Models – All of the capacity assessments undertaken have been carried out using Junctions 9 software or LINSIGv3.

5.2 Some of the flow diagrams refer to PCUs and some refer to vehicles. However, this has no material impact on the result arising from the modelling.

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6.0 Proposed Mitigation

6.1 Based on their assessments, the consultants have identified the following junctions at which there will be an impact and proposed mitigation measures to manage this, and highlighted additional cumulative contributions:

- i. Nyetimber Lane signalised junction with Grosvenor Gardens and Gossamer Lane – Proposed alterations to signal timings.
- ii. Rose Green Road priority junction with Grosvenor Gardens – As part of their standalone site transport assessment C&A have proposed an improvement scheme for this junction to include for an additional exit lane from Rose Green Road. This has been subject to a Road Safety Audit and supplied with vehicle tracking for a bus, and has been demonstrated to operate within capacity with all three Pagham developments (with traffic growth) for a future year of 2031. This scheme is acceptable to officers at WSCC. These works are estimated to cost £81,000. *See attached plan ref: 12-018-036/A.*
- iii. Sefter Road junction with Pagham Road – C&A proposed minor kerb realignment works at this junction as part of their standalone site transport assessment and demonstrated that this would increase capacity through the junction.

RPS provided a sensitivity test that demonstrated with their site open, any approaching traffic on Sefter Road would divert through Hook Lane and the Hallam Land site; there being plenty of capacity at both the site access and at the Hook Lane junction with Pagham Road, thereby reducing any queues and delay at the Sefter Road site.

It has been agreed with WSCC that there is a limit to whether any meaningful works can be carried out at this junction that will improve conditions. Furthermore, the review of highway safety at this junction demonstrates that there are no safety issues occurring as a result of the junction layout that could be exacerbated as a consequence of the addition of the development traffic flows. As such, the delays forecast in the future year of 2031 will be more as a matter of inconvenience and amenity than safety. It was concluded in HTp/1616/TN/03 (dated October 2017) and agreed that the Pagham Road/Sefter Road priority junction is suitable to accommodate the three proposed developments in its existing arrangement.

Therefore, no works at this junction are proposed as part of the cumulative assessments.

- iv. Lower Bognor Road priority junction with Pagham Road – It is not practical to carry out works at this junction due to the existing constraints of the highway network. Therefore, it has been agreed with WSCC that a contribution will be made to sustainable transport measures/works on the wider highway network as development traffic from the Pagham sites will displace existing traffic from

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this junction to the wider highway network. A total contribution of £390,000 is proposed.

- v. B2166 roundabout junction with Vinnetrow Road – Proposed widening of the entry onto the roundabout from the western B2166 arm. This has been subject to a Road Safety Audit and has been demonstrated to operate within capacity with all three Pagham developments (with traffic growth) for a future year of 2031. This scheme is acceptable to officers at WSCC. These works are estimated to cost £23,000. *See attached plan ref: 1616/14/A.*
- vi. B2166 roundabout junction with B2145 – Proposed widening of the three approaches to this junction. This has been subject to a Road Safety Audit and supplied with tracking for a max legal length articulated vehicle, and has been demonstrated to operate satisfactorily with all three Pagham developments (with traffic growth) for a future year of 2031. This scheme is acceptable to officers at WSCC. These works are estimated to cost £98,000. *See attached plan ref: 1616/13/E.*
- vii. WSCC have requested that the three developments also contribute to the provision of a link to the Pagham Harbour to Chichester cycle route from Pagham, to upgrade the surfaces of Footpaths 100, 106 and 104 and convert to bridleways to permit cycling.

6.2 The total costs of the proposed contributions and mitigation measures can therefore be summarised as set out in **Table 6.1** and **Table 6.2** below (values from **Tables 1.1** and **1.2**).

Table 6.1 – Cumulative Obligations - Contributions

Contribution Requirement	Value
West Sussex County Council - Contribution to sustainable transport measures on the wider highway network.	£390,000
West Sussex County Council - Additional contribution to off-site sustainable travel for upgrading the surfaces of Footpaths 100, 106 and 104 to bridleways to permit cycling.	£100,000
Total	£490,000

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Table 6.2 – Individual Development Site Obligations

S106 Highway Mitigation	Works or Contribution
Pagham South	
B2166 junction with B2145 proposed widening works to all arms.	Works
Upgrading surface of Footpath 101 (contribution to WSCC).	£65,000
The provision of two site access junctions with Pagham Road, associated pedestrian refuge facilities either side of each access and associated dropped kerbs, 2m wide footways and a new pedestrian crossing over Pagham Road to the immediate north of the Village Hall access.	Works
Provision of a replacement bus stop with layby, shelter, raised kerbs and timetable information.	Works
Land North of Hook Lane	
B2166 junction with Vinnetrow Road widening of western entry arm.	Works
Upgrade of local bus stops on Pagham Road at Hook Lane junction to provide northbound bus stop with raised kerbs and bus timetable information and southbound bus stop with new layby, raised kerbs and timetable information. Upgrade of local bus stops on Hook Lane near Hook Lane Close and on Lodsworth Road to include raised kerbs.	Works
Provision of two new site accesses, one on Hook Lane and one on Pagham Road. Both accesses will include 2m wide footways and associated dropped kerbs. The footway from the northern access on Hook Lane will link to the footway proposed as part of the Land North of Sefter Road site to provide a continued footway link between the two sites.	Works
Land North of Sefter Road	
Rose Green Road priority junction improvement scheme.	Works
Provision of a single all-purpose access to Sefter Road incorporating 2m footways.	Works
Provision of a pedestrian, cycle and emergency access to Rose Green Road.	Works

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7.0 Contribution Basis

- 7.1 The contributions are based on 980 dwellings, split between the three developers.
- 7.2 WSCC have requested that the three junction mitigation schemes proposed on their highway network are to be provided by the developers. Therefore, the developers have agreed to take a junction each as part of their individual Section 106 contributions package. However, as each junction has a different cost, in order to ensure that no developer is unfairly treated contributions towards the sustainable travel measures would be adjusted as appropriate.
- 7.3 It is proposed that the triggers for the off-site highway works and cumulative contributions will be on the competition of the 200th dwelling for that respective development.
- 7.4 Based on **Table 6.1** the contribution values are to be split between the developers as set out in **Table 7.1** below based on 980 dwellings coming forward from the three sites.

**Table 7.1 – Cumulative Contributions per Development
(Prior to mitigation works adjustment)**

Contribution Requirement	Value	Land North of Sefter Road	Land North of Hook Lane	Pagham South
Contribution to WSCC for sustainable transport measures on the wider highway network.	£390,000	£111,428	£119,388	£159,184
Additional contribution to WSCC for off-site sustainable transport measures - Upgrading surface of Footpaths 100, 106 and 104 to bridleways to permit cycling.	£100,000	£28,572	£30,612	£40,816
Contribution to WSCC	£490,000	£140,000	£150,000	£200,00

- 7.5 The estimated civil engineering cost of the mitigation works also proposed on the local highway network (see **Table 6.2**) are set out in **Table 7.2** below.

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Table 7.2 – Junction Mitigation Works

Development Site	Junction & Proposed Mitigation Works	Estimated Junction Mitigation Costs
Land North of Sefter Road (280 dwellings)	Rose Green Road priority junction – Widening of minor arm entry to form two lanes.	£81,000.00
Land North of Hook Lane (300 dwellings)	B2166 junction with Vinnetrow Road - Widening of western entry arm.	£23,000.00
Pagham South (400 dwellings)	B2166 junction with B2145 - Widening works to all arms.	£98,000.00
Total		£202,000

- 7.6 However, based on the costs of the respective junction works set out in **Table 7.2**, the contribution values to WSCC (of £500 per dwelling based on a total requested contribution of £490,000 as set out in **Table 7.1**) are to be adjusted to reflect the cost borne by each Developer in respect of the mitigation engineering works, as set out in **Table 7.3** below.
- 7.7 It should be noted that the figures set out in this statement are part of a wider Section 106 package for each development site and as such could be subject to a future viability assessment.

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Table 7.3 – Cumulative Contributions Readjustments

Development Site	Footpath Contribution (£100,000) (a)	Unadjusted Contribution Value (Sustainable Measures) (b)	Estimated Junction Mitigation Works Costs (c)	Junction Costs Apportioned Value (d) (£202,000/total no. dwellings*)	Adjustment to be made to Contribution Value (e) (d-c)	Adjusted Contribution to WSCC per Development (Sustainable measures) (b+e)
Land North of Sefter Road (280 dwellings)	£28,572.00	£111,428.00	£81,000.00	£57,714.29	-£23,285.71	£88,142.29
Land North of Hook Lane (300 dwellings)	£30,612.00	£119,388.00	£23,000.00	£61,836.73	+£38,836.73	£158,224.73
Pagham South (400 dwellings)	£40,816.00	£159,184.00	£98,000.00	£82,448.98	-£15,551.02	£143,632.98
Totals	£100,000.00	£390,000	£202,000	£202,000		£390,000

*980 dwellings

Notes:

The total contribution required to be made to WSCC is £490,000 (inclusive of the £100,000 for footpath contributions) plus the delivery of three junction mitigation schemes.

The junction costs result in a cumulative contribution value of £206.12 per dwelling, based on a total of 980 dwellings.

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8.0 Conclusions

8.1 The following is concluded:

- i. Where differences exist within the three cumulative reports they are too insignificant to affect the mitigation measures required.
- ii. The Pagham developments sites can cumulatively be accommodated on the highway network with the implementation of the proposed mitigation schemes.

Signed



On behalf of RPS transportation (on behalf of Hallam Land Management)



On behalf of Highgate Transportation (on behalf of Hanbury Properties)



On behalf of C & A Consulting Engineers Ltd. (on behalf of Taylor Wimpey)

Dated 3rd April 2018