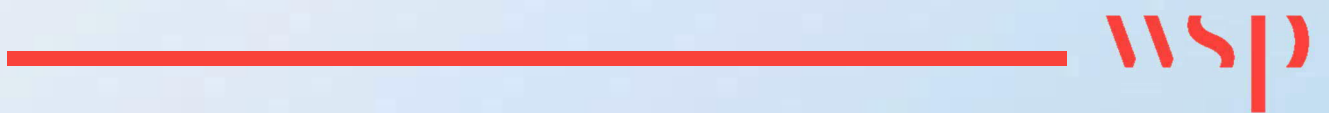


Appendix D

SOUTHERN WATER



Developer Services

Foul Sewerage Modelling Criteria:

Southern Water continues to review its modelling procedures and design standards. Our current update on the impact of a new development on the public sewer network is as below:

Item			
Development Size – Number of units	N		
Per Capita Flow -Litres/ head / day	G	125	(see note 4)
Infiltration – Percentage	I	10	(see note 5)
Occupancy – Persons/Dwelling	O	2.4	(see notes 6 & 7)
Dry Weather Flow multiplier (PF - Peaking Factor) (SD –Storm Duration– minutes)		SD	PF
		30 to 240	2.5
		240 to 480	2.0
		Above 480	1.4
Allowance for misconnected surface water		1.4 Square Metres per Dwelling (see note 8)	
Population – Number of people	P	N x O	

Hence: Design flow = (PF + 0.1) PG (foul flow element) plus the impact of 1.4 x N sq. m. (allowance for misconnected surface water)

Note that the above criteria applies subject to:

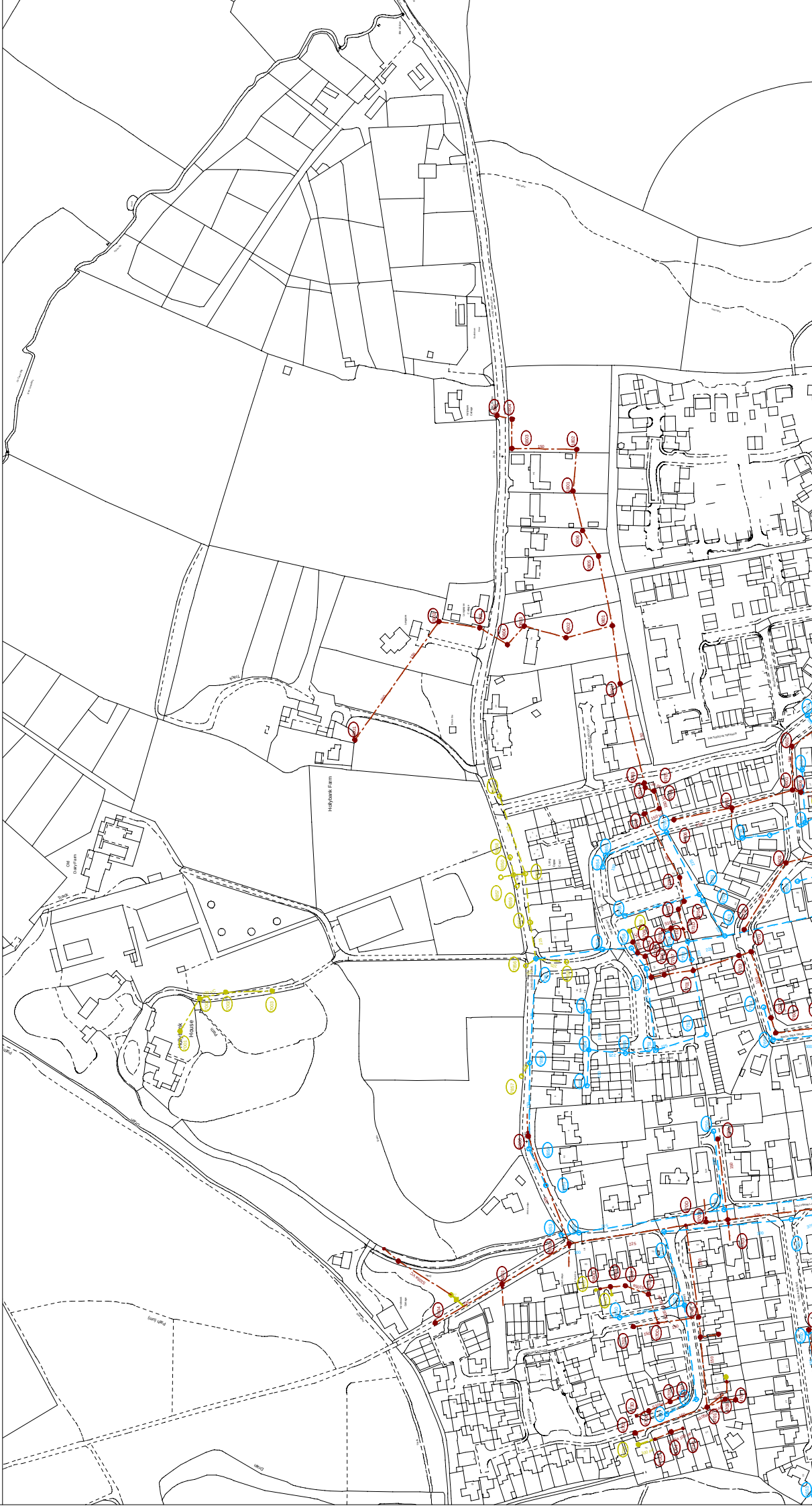
- 1) Only to the case of new domestic foul flow.
- 2) No proposed discharge of surface water into the foul sewer.
- 3) Southern Water supports the Hierarchy of H3 of Building Regulations with regards to the disposal of Surface Water.
- 4) Compliance with G2 of Building Regulations; that reasonable provision must be made by the installation of fittings and fixed appliances that use water efficiency for the prevention of undue consumption of water.
- 5) That upstream sewers are designed and constructed with materials and method fully compliant with Sewers for Adoption and Southern Water published addendum and corrigendum, in order to ensure that the infiltration of groundwater is minimised to the low rate of 10% of base flow.

- 6) That unless we are advised otherwise, we will assume the occupancy rate of 2.4 persons per property to be appropriate and in accordance with survey data that Southern Water has for development within its area.
- 7) Should the makeup of development be known and advised to Southern Water, with regards to the number of 1-bedroom, 2-bedroom units etc. then the modelling can be revised on the basis of:
- Number of bedrooms + 1, as the occupancy for each unit type.
 - This level of information may not be available for initial Capacity Check assessments and in this case the default figure of 2.4 persons/dwelling is considered appropriate.
- 8) Should the density of the development be known, (where development density is calculated based on the number of expected new addresses divided by the area of the proposed site development) and advised to Southern Water, then the allowance for misconnected surface water can be adjusted to the following:

Development Density (Properties / 4Ha)	Misconnected surface water allowance m ² /property
<=100	2.1
120	1.6
140	1.1
180	0.6
>=200	0.3

Flats, housing association, and commercial property addresses will have no misconnected surface water allowance applied.

- 9) With regards to the allowance for misconnected surface water, reference is made to published guidance or studies including LASOO, CIRIA, DEFRA, and UKWIR.
- 10) With regards to any proposed pumped flow rates.
- For the hydraulic design of pumping stations (and associated rising mains) we are guided by Sewers for Adoption and in the case of Edition 7, by clauses D4.6 and D5.3.1.
 - This has a range of velocity of discharge in the rising main between 0.75 to 1.8 m/s, when the pump is operating. Our preference would be for a higher velocity than the minimum.
 - If however the discharge is by gravity, then we would seek flows within the pipe capacity and self cleansing range.



The positions of pipes shown on this plan are believed to be correct, but Southern Water does not accept any liability for errors or omissions or for any inaccuracies. The actual positions should be determined on site.

Based upon Ordnance Survey Digital Data with the participation of the controller of RAMS.O. Crown Copyright Reserved Licence No. VU/288520

O.S. REF: SU7407NE

Sewer Plot

WARNING: BAC pipes are constructed of Bonded Asbestos Cement
WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement

Scale: 1:2500



Printed By: Mercy
Site Plan
Requested By:



Date: 6-5-2021



Julien Blavignac
WSP
Mountbatten House
Basing View
Basingstoke
Hampshire
RG21 4HJ

Your ref

Our ref
DS_CC_PPE-154551

Date
27 May 2021

Contact
Tel 0330 303 0119

Dear Mr Blavignac,

Level 1 Capacity Check Enquiry: Land North of Long Copse Lane, Emsworth, Hampshire, PO10 7UR.

We have completed the capacity check for the above development site and the results are as follows:

Foul Water

There is currently adequate capacity in the local sewerage network to accommodate a split foul flow of **2.42 l/s** for the above development at manhole reference **SU75071804**, **SU75070804** and **SU74076800**. Please note that no surface water flows (existing or proposed) can be accommodated within the existing foul sewerage system unless agreed by the Lead Local Flood Authority in consultation with Southern Water, after the hierarchy Part H3 of Building Regulations has been complied with.

Connecting to our network

It should be noted that this information is only a hydraulic assessment of the existing sewerage network and does not grant approval for a connection to the public sewerage system. A formal Sewer Connection (S106) application is required to be completed and approved by Southern Water Services. To make an application visit: [Developer Services Portal \(southernwater.co.uk\)](https://southernwater.co.uk/developer-services-portal)

Please note the information provided above does not grant approval for any designs/drawings submitted for the capacity analysis. The results quoted above are only valid for 12 months from the date of issue of this letter.



Should it be necessary to contact us please quote our above reference number relating to this application by email at southernwaterplanning@southernwater.co.uk

Yours sincerely,

Growth Planning Team
Business Channels

southernwater.co.uk/developing-building/planning-your-development

Blavignac, Julien

From: DSAddInfo <DSAddInfo@southernwater.co.uk>
Sent: 12 May 2021 17:19
To: Blavignac, Julien
Cc: Beeching, Luke
Subject: RE: Further Info Required - SWS-HANTS-CC-005566 - DS_CC_PPE-154551 - Land North of Long Copse Lane, Emsworth, Hampshire, PO10 7UR

Dear Mr Julien,

Thank you for sending us the additional information we requested.

Please note, the 6 DWF calculation sheet is not currently used to calculate foul flows for new developments. Foul flows for the proposed development is calculated as below;

Development Size - Units	N	268	
Occupancy - persons/dwelling (default 2.4)	O	2.4	
Per Capita Flow - l/h/d (default 125l/h/d)	G	125	l/h/d
Infiltration (default 10%)	I	10%	
Trade Flow - L/day	E		l/d
DWF Multiplier (PF) (default 2.5)		2.5	
Population of development (P)	=	643.2	
		Peak Foul Flow =	2.42 l/s

Where the DWF is variant, depends on the storm duration of manhole.

For pumped discharge, we would consider a pump rate of 6 l/s as per SWS modelling specifications, and peak flow for 90 units would result in 0.81 l/s.

I hope you find the above information helpful, if you have any further questions please do not hesitate to reply to this email.

Yours sincerely,

Technical Delivery
Business Channels

T. 0330 303 0119
southernwater.co.uk



From: Blavignac, Julien [mailto:Julien.Blavignac@wsp.com]
Sent: 10 May 2021 12:07
To: DSAddInfo <DSAddInfo@southernwater.co.uk>
Cc: Beeching, Luke <Luke.Beeching@wsp.com>
Subject: RE: Further Info Required - SWS-HANTS-CC-005566 - DS_CC_PPE-154551 - Land North of Long Copse Lane, Emsworth, Hampshire, PO10 7UR

Dear Sir,

Thank you for your email and attached letters requesting further information.

Please find below a copy of your queries with responses (highlighted in grey) below:

1./ Please note the requested flow rate for foul is too high for 268 residential units. As per our estimation, the following peak flow rate would apply: 2.42 l/s for 268 dwellings at 125l/h/d with an occupancy rate of 2.4 person/dwelling using 10% infiltration and DWF of 2.5. Please confirm if you want us to carryout assessment based on our calculation.

WSP Response:

Could Southern Water possibly confirm the rules/assumptions made behind the use of a DWF factor of 2.5?

CATCHMENT						DWF	= PG + I + E
LOCATION						3.0*DWF	= 3PG + I + 3E
						4.5*DWF	= 4.5PG + I + 4.5E
						6.0*DWF	= 6PG + I + 6E
	Residential	Commercial	Total			Formula A = DWF + 1360P	
Address Points	268	0	268	nr		where P = Pr + Pc (Reside	
Occupancy*	2.4		1.2	persons/prop		G = Per Capita Flow	
Population (Pr + Pc)	643	0	643	nr		I = Infiltration (As	
Trade Flows		0	0	l/d		E = Trade Flows	
Per Capita Flow (G)	125	l/hd/d				* Occupancy rate based o	
Infiltration (i%)	10%					divided by Residential a	
Percentage Combined	100%					! Note no allowance made	
						Design Flow -4000 l/unit d	
						Approximates to 3 perso	
						200 l/hd/d : 6.0*DWF+10% Ir	
	Population nr	DWF l/s	2.5DWF l/s	4.5DWF l/s	6DWF l/s	Formula A 100% Combined l/s	Form Comb
Residential	643	1.024	2.419	4.281	5.676	11.148	
Commercial	0	0.000	0.000	0.000	0.000	0.000	
Total	643	1.024	2.419	4.281	5.676	11.148	

We understand that the DWF Coefficient might be reduced from a robust value of '6'. However, charts (extract below), we have obtained historically as 'Guideline' from Southern Water recommended a use of 6 DWF +10% for design flow calculations. See extract below.

INPUT							
Suggested dry weather flow rates				No	DWF	(6 DWF + 10 %)	Sewers for adoptions 4000 l/h/day/prop L/S
Litres per day					L/S	L/S	
1	General Housing	600	per property	268	1.861	11.353	12.41
2	School	80	per pupil		0.000	0.000	
3	Assembly Hall	10	per seat		0.000	0.000	Design Flow =
4	Cinema	10	per seat		0.000	0.000	
5	Theatre	10	per seat		0.000	0.000	No of Properties =
6	Sports Hall	50	per person		0.000	0.000	
7	Hotel	550	per room		0.000	0.000	0
8	Guest House	200	per room		0.000	0.000	
9	Motel	300	per room		0.000	0.000	i/s
10	Holiday apartments	150	per person		0.000	0.000	
11	Leisure park	220	per person		0.000	0.000	
12	Caravan park standard	250	per space		0.000	0.000	
13	Caravan park serviced	450	per space		0.000	0.000	
14	Camping Site standard	200	per space		0.000	0.000	
15	Camping Site serviced	350	per space		0.000	0.000	
16	Public house	150	per seat		0.000	0.000	
17	Restaurant	270	per seat		0.000	0.000	
18	Drive in restaurant	380	per seat		0.000	0.000	
19	Hospital	750	per bed		0.000	0.000	
20	Nursing Home	375	per bed		0.000	0.000	
21	Offices	750	per 100 m ²		0.000	0.000	
22	Shopping centre	400	per 100 m ²		0.000	0.000	
23	Warehouse	150	per 100 m ²		0.000	0.000	
24	Commercial premises	300	per 100 m ²		0.000	0.000	
25	Manufacturing unit	550	per 100 m ²		0.000	0.000	
				TOTAL	1.861	11.353	

The above table is assuming a daily usage of 150l of water per head assuming 4 people per property. We understand that water usage are now being revised to 120l and are satisfied that an occupancy of 2.4 per dwelling is applied (instead of 4).

I would be grateful if you could come back to us on the use of the DWF coefficient.

In addition to the above, could you please also take into consideration in your assessment of the peak flow that will be coming from the Pumping Station:

- ☐ Pumping station will be receiving foul flows from 90 Residential unit.
- ☐ 80mm rising main is used (with assumed 1.8m/s self-cleansing velocity)

2./ Site location plan with the site boundary clearly defined.

WSP Response : A copy of the Masterplan has been marked up with a wide red line to show the extent of the 268 residential units at the site, a copy is attached for your review and information.

3./ Please provide the drainage plan of proposed development

WSP Response : Please note that for the time being, we only have a copy of the Foul Drainage Strategy drawing prepared for the site. The strategy for Surface Water is under progress.

Whilst a plan can not be issued for as part of our application, I confirm that the Surface Water Drainage Strategy will not connect to Southern Water surface assets.

The Surface Water drainage strategy will be developed around connecting to nearby watercourses abutting the northern boundary of the site and via a new highway drain that is proposed to be built in Long Copse Lane and discharge to a local water course. For your information only, I have attached a copy of the proposed highway drain.

Rgds,

Julien Blavignac BSc, MSc
Senior Engineer



T+ 44 (0)1256 318 585

Mountbatten House, Basing view, Basingstoke, RG21 4HJ

wsp.com

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From: DSAddInfo <DSAddInfo@southernwater.co.uk>

Sent: 06 May 2021 15:14

To: Blavignac, Julien <Julien.Blavignac@wsp.com>

Subject: Further Info Required - SWS-HANTS-CC-005566 - DS_CC_PPE-154551 - Land North of Long Copse Lane, Emsworth, Hampshire, PO10 7UR

Dear Mr Blavignac,

Thank you for the Capacity Checks application for the above development.

Please read the attached response and [directly reply to this email](#) with your further information needed to progress this application.

Please quote the above reference number in all communications relating to this application.

Yours sincerely,

Growth Planning Team
Business Channels

southernwater.co.uk/developing-building/planning-your-development

T. 0330 303 0119
southernwater.co.uk



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