



404408

Appendix E Arun District Council Correspondence

From: Paul Cann
Sent: 08 January 2020 15:24
To: Kevin Macknay; Stuart Burnett
Subject: RE: D1757 Lidsey Road, Woodgate PO20 3SU (Land at Wings Nursery)

Hi Stuart

Our records enclosed. It is very likely that improvements will be required to the adjacent ditches/culverts for which the landowner will have riparian responsibility.

Also enclosed is an historic map overlaying current OS. As a priority, the extent of existing ditches/culverts on and around the perimeter need to be fully identified – this includes checking the possibility of a culvert following the old boundary line that runs through the middle of the site. This could be critical to the development layout.

Infiltration will need to be fully investigated for surface water disposal.

The site is within the Lidsey sewerage treatment works catchment. See <https://www.arun.gov.uk/lidsey-foul-water> - a foul drainage statement will be required in terms of the intended scheme. Southern Water comments in this respect would also be advised.

Regards

Paul Cann
Principal Engineer (Drainage)

Paul Cann | Principal Engineer (Drainage), Engineering Services, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

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Save the environment - think before you print.

Arun District Council Maps



Arun District Council Maps



Appendix F West Sussex County Council Correspondence

From: Kevin Macknay
Sent: 08 January 2020 13:07
To: Stuart Burnett
Cc: Paul Cann
Subject: RE: D1757 Lidsey Road, Woodgate PO20 3SU (Land at Wings Nursery)

Stuart,

Further to your recent enquiry. I could not find a copy of our response dating back to November 2017. So please see our response below.

Regards,

Kevin

Kevin Macknay
Flood Risk Management -- Team Leader
Highways, Transport and Planning
Place Services
West Sussex County Council

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Location: Western Area Office, Drayton Lane, Nr. Chichester, West Sussex. PO20 2AJ.

[Report a problem with a road or pavement or raise a highways related enquiry](#)

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From: Stuart Burnett
Sent: 08 January 2020 09:34
To: Paul Cann; Kevin Macknay
Subject: D1757 Lidsey Road, Woodgate PO20 3SU (Land at Wings Nursery)

Good morning Paul/Kevin,

Happy New Year to you both, I hope you both managed to catch a break over the festive period (where did that go!?)

Apologies for the email this morning, we have been appointed to prepare a FRA and Drainage Strategy in relation the above site (location plan attached).

We prepared a report for the same site back in November 2017, however the site has now been sold (I believe) and the proposals have been re-development. Previously, the proposals consisted of up to 55 No. residential units, where as the new scheme consists of up to 75 dwellings.

Please could you review our standard checklist, below, and provide me with any fresh information that you may have in relation to the site;

Flood Zones

- Please confirm the Flood Zones for this area.
The area is shown to be within Flood Zone 1 on the current EA Flood Zone mapping.
- Please confirm surface water, reservoir flooding, sewer flooding. Please provide plans and depth data from your GIS UFMSW for 30yr, 100yr & 1000yr as applicable (OS Datum).
The area of interest is shown to be at low risk of surface water flood, based on the current FMfSW. See attached plan.

- Please confirm mapping and records for any surface water assets owned or maintained.
See attached plans showing existing WSCC road gullies and highway manholes.
- Please confirm if there are any future drainage improvements proposed for this area.
None that we are aware of. However, the BEW (Barnham, Eastergate, Westergate) development to the east of Lidsey Road will affect the local drainage systems to the east.
- Please confirm details of existing or planned flood alleviation and defences in this area.
None that we are aware of. However, the BEW (Barnham, Eastergate, Westergate) development to the east of Lidsey Road will affect the local drainage systems to the east.
- Please confirm if you are aware of any historic flooding within the confines of the site.
None that we are aware of.
- Please confirm if you are aware of any historic flooding in close vicinity and/or on the public highway.
We are aware of historic flooding at the junction of Oak Tree Lane / Lidsey Road, affecting No. 1 and 2, Lidsey Road. This is due to surface water run-off from Lidsey Road not draining away once it flows on to the existing grass verge.

Groundwater

- Please confirm details of any groundwater flooding issues in the area, including flood levels, flood extents and any available anecdotal information.
The area is shown to be at 'moderate' risk of ground water flooding on the current JBA mapping i.e. groundwater levels can reach between 0.025m and 0.5m below the ground surface. We know that ground water flooding is an issue north of the railway, but we have no record of issues to the south.

Assets

- Please confirm mapping and records for any surface water assets owned or maintained.
See attached plans showing existing WSCC road gullies and highway manholes.
- Please confirm if there are any historic culverted watercourses within or in close vicinity to the site. Please provide map records where available.
The site has existing ditches along the east and west site boundaries. It is important that these ditches are retained during and after the construction. It would appear, based on historic OS mapping that many of the historic field boundaries were once ditches which drained to the west.
- Please can you provide any map records denoting the highway drainage network. Is this a piped system or soakaways?
See attached plans showing existing WSCC road gullies and highway manholes.

Policy/Future

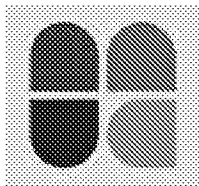
- Please confirm the most recent Strategic Flood Risk Assessment (SFRA).
WSCC – June 2010.
- Please confirm if there are any future drainage improvements proposed for this area.
None that we are aware of. However, the BEW (Barnham, Eastergate, Westergate) development to the east of Lidsey Road will affect the local drainage systems to the east.
- Please confirm if any drainage studies and/or SWMP have/are being assess for this area.
The Lidsey SWMP covers your area of interest.
https://www.westsussex.gov.uk/media/4734/lidsey_swmp.pdf

Paul, from memory, I believe the site falls within the Lidsey Foul Water Treatment Catchment Area. Any specific information or requirements which may or may not have changed since our last report was produced would be gratefully received if you could point me in the right direction.

Thank you in advance to you both for your help with this matter, I look forward to hearing from you in due course. As always, should you have any questions at all, please feel free to let me know – happy to help where I can.

Kind regards

Stuart Burnett
Engineer



Bright Plan Civils, Transport Planning and Civil Engineering Consultants

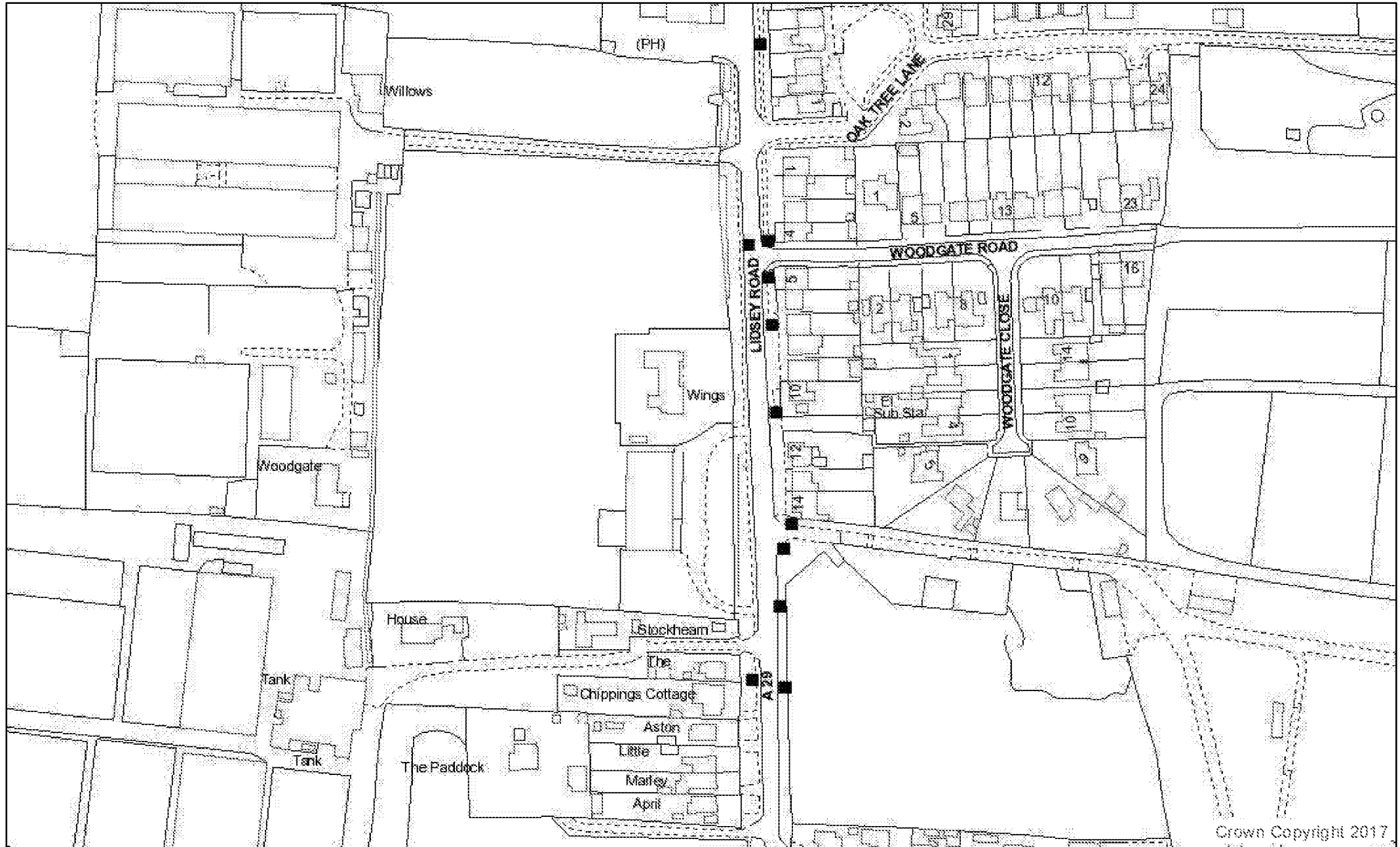
Bright Plan Civils, 2 West Barn, Norton Lane, Chichester, PO20 3AF

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A29 Lidsey Road, Woodgate - Existing Highway Manholes



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Date: January 2020

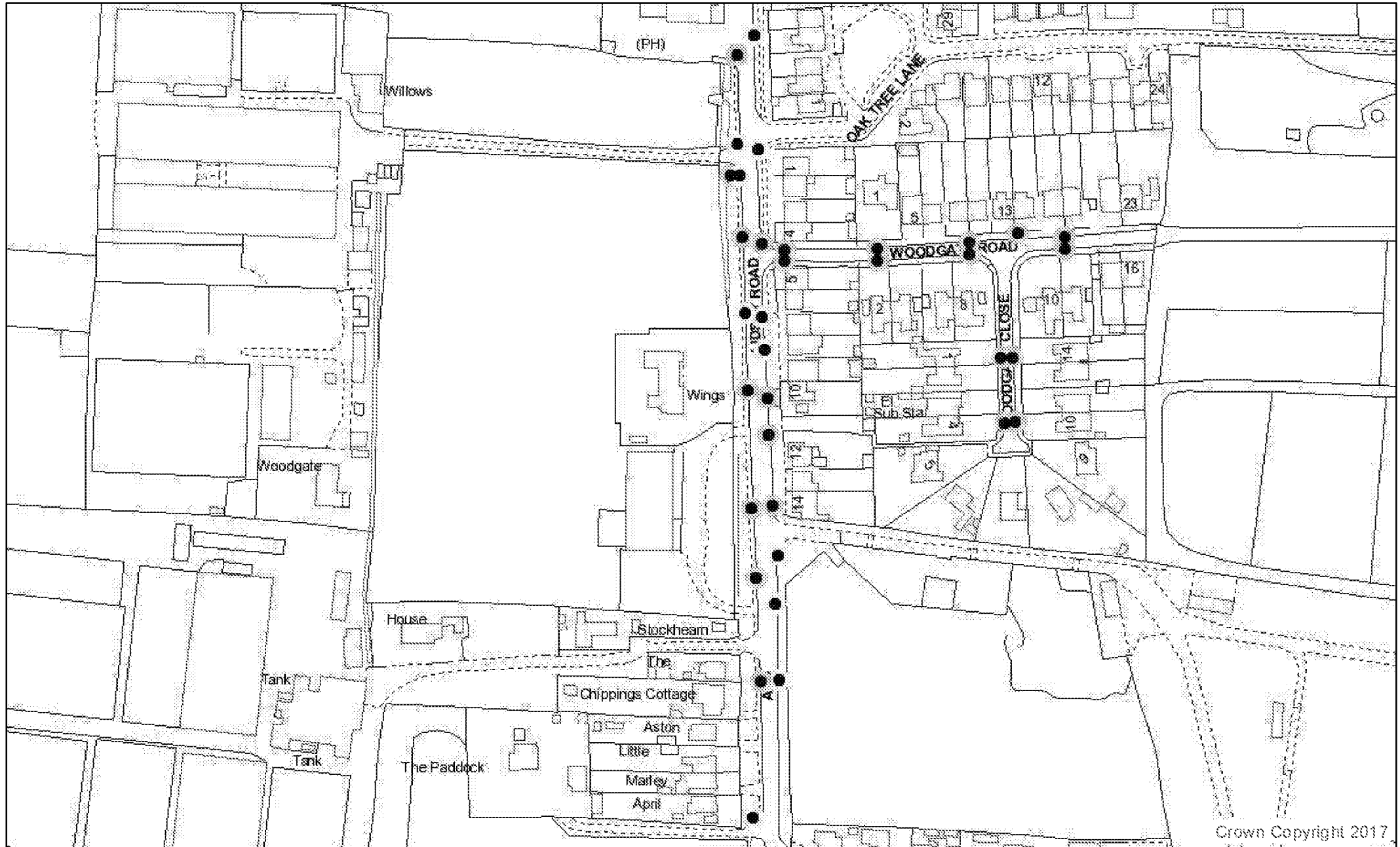
Author: K Macknay

Scale 1:2,000

Map Notes:

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West Sussex County Council
100023447 (2017)

A29 Lidsey Road, Woodgate - Existing Highway Gullies



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Date: January 2020

Author: K Macknay

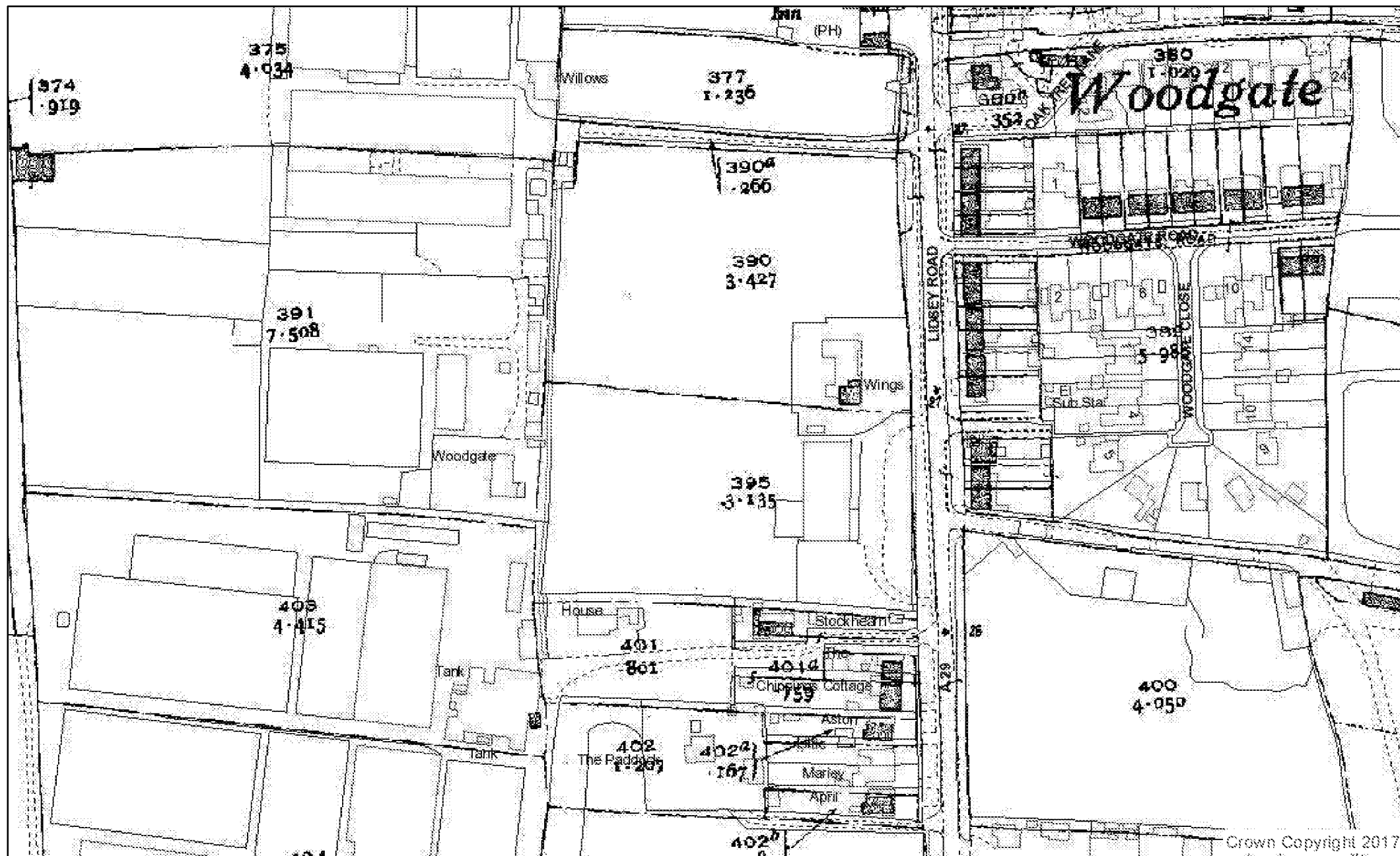
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A29 Lidsey Road, Woodgate - Historic OS Mapping 1930's



Date: January 2020

Author: K Macknay

Scale 1:2,000

Map Notes:

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Appendix G Lidsey Surface Water Management Plan

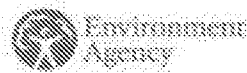
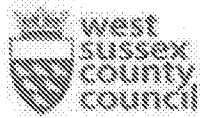
Lidsey Surface Water Management Plan

West Sussex County Council

ATKINS

A Partnership between:

- West Sussex County Council
- Southern Water
- Arun District Council
- Environment Agency



Summary

Opportunity Area Reference	Lidsey Road & Oak Tree Lane
Local Flood Risk Zone	LFRZ_018
Properties at Risk (1 in 100 Year)	10
Average Annual Damages	£6,861
Preferred Intervention	Asset Management. Reduce surface water and infiltration entering public foul sewers. Improve surface water conveyance.
Present Value Damage Avoided (Assuming a 1 in 30 year level of protection scheme is identified and implemented)	£2,406
Key Stakeholders	WSCC, ADC, SWS

Flood History	Pluvial flooding experienced during the summer 2012 storm along Lidsey Road - otherwise flooding has not occurred here in recent history. Hydraulic overload of sewers reported in Oak Tree Lane on 02/01/2013 and on Westergate Street on 29/01/2013 and 09/11/2010.
Constraints	Limited detail on surface water drainage records in this area.
Receptors	Property and Highway
Opportunities	Asset Management. Reduce surface water and infiltration entering public foul sewers. Improve surface water conveyance.

Overview of Key Flood Risk Sources, Mechanisms, and Pathways

Property flooding caused by pluvial runoff from highway. Flooding from foul manholes in highway due to hydraulic overload.

Flood Risk Damage Estimates

Rainfall Return Period	Number of Properties at Risk		Average Annual Damages
	Residential	Commercial	
1 in 30 Year	8	0	£6,861
1 in 100 Year	10	0	
1 in 100 Year + CC (2080's)	16	1	

Shortlisting of Interventions

					Scoring (-2 to +2)						
					Options Assessment						
Option Ref.	Option Category (Source / Pathway / Receptor / Other)	Option	Potential	Considered	Economic	Environmental	Objectiveness	Social	Technical	Total Score	
1	Do Nothing	Do Nothing	No	No	0	0	0	0	0	0	Installation of water butts in upstream catchment.
2	Do minimum	Do minimum - continue current maintenance	Yes	Yes	2	2	0	2	1	7	
3	Source	Green Roof	No	No	0	0	0	0	0	0	
4	Source	Detention Basins (Attenuation / Retention)	No	No	0	0	0	0	0	0	
5	Source	Permeable Paving	No	No	0	0	0	0	0	0	
6	Source	Ponds and Wetlands	No	No	0	0	0	0	0	0	
7	Source	Rainwater Harvesting	Yes	Yes	2	2	1	2	2	9	
8	Source	Soakaways	No	No	0	0	0	0	0	0	
9	Source	Swales	No	No	0	0	0	0	0	0	
10	Source	Bioretention Basins	No	No	0	0	0	0	0	0	
11	Source	Bioretention Street Planting	No	No	0	0	0	0	0	0	
12	Source	Sealing of manhole covers and protecting gullies	Yes	Yes	1	2	2	2	1	8	
13	Source	Sealing Sewers (Reduce ground water / rainfall induced infiltration)	Yes	Yes	1	2	2	2	0	7	
14	Source	Other Source Measures	No	No	0	0	0	0	0	0	
15	Pathway	Increasing Capacity in Drainage System (Storage,Upsize)	Yes	Yes	0	0	2	0	2	4	Investigate conveying surface water away from properties. This should be completed after survey of existing drainage assets.
16	Pathway	Deculverting Watercourse(s)	No	No	0	0	0	0	0	0	
17	Pathway	Improved maintenance regimes	Yes	Yes	-2	0	2	0	2	2	
18	Pathway	Increase Gully Assets	Yes	Yes	0	0	2	1	2	5	
19	Pathway	Land management practices	No	No	0	0	0	0	0	0	
20	Pathway	Managing overland flows (above ground storage)	Yes	No	0	0	0	0	0	0	
21	Pathway	Managing overland flows (preferential flow paths during exceedance)	Yes	No	0	0	0	0	0	0	
22	Pathway	Seperation of foul and surfacewater	Yes	Yes	0	2	2	0	0	4	
23	Receptor	Improve Weather Warning	No	No	0	0	0	0	0	0	
24	Receptor	Improve resilience to flooding	Yes	Yes	2	2	2	2	1	9	
25	Receptor	Social change, education and awareness	No	No	0	0	0	0	0	0	
26	Receptor	Raising doorway / access threshold	Yes	Yes	2	2	2	2	1	9	
27	Receptor	Planning policies to influence development (Development Control, SUDS Strategy, Blue Development Corridors, New Development).	Yes	No	0	0	0	0	0	0	
28	Receptor	Temporary demountable flood defences	Yes	Yes	1	0	2	0	2	5	
29	Strategy	Further Study / Investigations	Yes	Yes	1	1	1	1	1	5	
30	Strategy	Survey, Advise & Monitoring	No	No	0	0	0	0	0	0	
31	Strategy	Community Awareness	No	No	0	0	0	0	0	0	

Key Stakeholders

Provisionally Identified:
ADC / WSCC (Action 1) SWS (Action 2), ADC (Action 3), SWS WSCC (Action 4)

Actions

As Agreed by Partner Organisations	
1	Survey private road existing highway drainage and confirm condition and arrangements. Implement clearance of the ditch on the west side of Lidsey Road and investigate capacity downstream of the highway ditch
2	Area to be considered as part of the DSF study.
3	Consider use of flood mitigation to protect properties from pluvial flooding from highway based on outputs from the DSF study
4	Investigate and prioritise interventions to reduce clear water inflow and Infiltration of public foul sewers. Work with Local Authority to target resilience improvements.
5	

LFRZ_0018 - Oak Tree Lane, Woodgate

Figure 7.37 - Flood Risk LFRZ_018 (1 in 100 year storm event)



Figure 7.38 - Flood Hazard LFRZ_018 (1 in 100 year storm event)



Table 7-36 - Predicted Residential and Commercial Property Flood Impact LFRZ_018

Rainfall Return Period	Predicted number of properties at risk of flooding	
	Residential	Commercial
1 in 30 Year	8	0
1 in 100 Year	10	0
1 in 100 Year + (Climate Change (2080's))	16	1

Table 7-37 - Summary of local flood risk within the LFRZ_018

Flood Risk Source			
Pluvial Flood Risk	Fluvial Flood Risk	Ground Water Flood Risk	Public Sewer Flood Risk
Medium	Low	Low	High
Flood Mechanism			
Property flooding caused by pluvial runoff from highway. Flooding from foul manholes in highway due to hydraulic overload.			
Flood Risk Receptors			
Residential, commercial properties and highway.			
Flood Hazard			
A 'low' flood hazard is predicted for 1% annual chance storm event (1 in 100 year return period) of Burndell Road			
Validation			
Pluvial flooding experienced during the summer 2012 storm along Lidsey Road - otherwise flooding has not occurred here in recent history. Hydraulic overload of sewers reported in Oak Tree Lane on 02/01/2013 and on Westergate Street on 29/01/2013 and 09/11/2010.			

Table 0-1 - LFRZ Average Annual Damages

Local Flood Risk Zone	Location Name	Average Annual Damages (£)	Assuming a flood relief scheme was implemented providing 1 in 30 year level of flood protection	
			Predicted Residual Annual Average Damages (£)	Annual Average Damages Avoided (£)
LFRZ_006	Lake Lane, Barnham	£277,702	£76,471	£201,231
LFRZ_017	Felpham Road, Felpham	£74,582	£22,367	£52,215
LFRZ_013	Elmer Sands, Middleton on Sea	£70,270	£18,790	£51,481
LFRZ_019	Wandleys Lane, Eastergate	£42,018	£10,454	£31,564
LFRZ_023	Rudwicks Close, Broomcroft Road, The Loop, Jacken Close, Bramfield Road, Leverton Avenue, Limmer Lane (east end), Burley Road and Dryad Way in Felpham	£40,048	£17,538	£22,510
LFRZ_025	Limmer Lane, Felpham	£39,629	£13,084	£26,545
LFRZ_003	Walberton Village (Barnham Lane (A))	£36,918	£10,881	£26,037
LFRZ_002	Elm Grove, Barnham	£31,363	£11,984	£19,379
LFRZ_026	Eastergate Lane, Eastergate	£27,116	£15,545	£11,572
LFRZ_024	West Close, Middleton on Sea	£24,643	£5,608	£19,035
LFRZ_014	Lodge Close & Willow Brook, Middleton on Sea	£22,553	£9,285	£13,268
LFRZ_015	Sea Way, Middleton on Sea	£14,495	£2,965	£11,530
LFRZ_004	Maple Road, Walberton	£13,692	£3,298	£10,394
LFRZ_021	Marshall's Close / Church Lane, Barnham	£13,006	£3,839	£9,167
LFRZ_022	Southdean Close, Middleton on Sea	£9,816	£4,502	£5,313
LFRZ_018	Oak Tree Lane, Woodgate	£6,861	£2,406	£4,454
LFRZ_020	Highground Lane, Barnham	£5,916	£1,885	£4,030
LFRZ_012	Yapton Road, Middleton on Sea	£4,439	£2,197	£2,242
LFRZ_010	Burndell Road, Yapton	£4,065	£1,722	£2,343
LFRZ_027	Downsview Road, Barnham	£3,794	£825	£2,970
LFRZ_001	West Walberton Lane, Walberton	£3,693	£723	£2,970
LFRZ_016	Golf Links Road, Felpham	£524	£330	£194
LFRZ_009	Yapton Road, Yapton	£429	£429	£-
LFRZ_008	Barnham Lane, Barnham (C)	£362	£362	£-
LFRZ_005	Barnham Lane, Barnham (B)	£68	£68	£-
LFRZ_007	Park Road, Barnham	£-	£-	£-
LFRZ_011	West View Drive, Yapton	£-	£-	£-
Total		£768,001	£237,559	£530,442

Analysis from the integrated modelling predicts that there are 592 residential properties and 215 non-residential properties at risk across the catchment for a 3.33 probability storm event. This totals £2.7 million estimated Average Annual Damages (AAD), of which £0.77 million is within 27 LFRZs. As such, the LFRZs account for 28% of the Lidsey SWMP study areas AADs predicted to be incurred. If schemes were implemented in all of the LFRZs and continued for 100 years, then the Present Value benefits would be in the order of £15.8M based on the current Treasury variable discount rate which starts at 3.5%.

7.6 LFRZ Prioritisation

To assist with prioritising future works on all LFRZs a prioritisation methodology was applied. It is considered important to use a simple approach to ensure clear interpretation of the prioritisation process between one LFRZ over another. Given the economic AADs for the LFRZ incorporates the predicted number of properties flooded and accounts for apportioned damages to commercial properties it is considered appropriate that the following priority is given to each of the LFRZs as shown in Table 7.57.

Table 0-2 - LFRZ Prioritisation

Local Flood Risk Zone	Location Name	Priority
LFRZ_006	Lake Lane, Barnham	High
LFRZ_017	Felpham Road, Felpham	High
LFRZ_013	Elmer Sands, Middleton on Sea	High
LFRZ_019	Wardleys Lane, Eastergate	High
LFRZ_023	Rydbucks Close, Broomecroft Road, The Loop, Jackson Close, Branford Road, Loverton Avenue, Linner Lane (East), Burley Road and Dryad Way in Felpham	High
LFRZ_025	Linner Lane, Felpham	High
LFRZ_003	Walberton Village (Barnham Lane (A))	High
LFRZ_002	Elm Grove, Barnham	Medium
LFRZ_026	Eastergate Lane, Eastergate	Medium
LFRZ_024	West Close, Middleton on Sea	Medium
LFRZ_014	Lodge Close & Willow Brook, Middleton on Sea	Medium
LFRZ_015	Sea Way, Middleton on Sea	Medium
LFRZ_004	Maple Road, Walberton	Medium
LFRZ_021	Marshall's Close / Church Lane, Barnham	Medium
LFRZ_022	Southdean Close, Middleton on Sea	Medium
LFRZ_018	Oak Tree Lane, Woodgate	Medium
LFRZ_020	Highground Lane, Barnham	Medium
LFRZ_012	Yapton Road, Middleton on Sea	Medium
LFRZ_010	Burdell Road, Yapton	Medium
LFRZ_027	Downsview Road, Barnham	Medium
LFRZ_001	West Walberton Lane, Walberton	Medium
LFRZ_016	Golf Links Road, Felpham	Low
LFRZ_009	Yapton Road, Yapton	Low
LFRZ_008	Barnham Lane, Barnham (C)	Low
LFRZ_005	Barnham Lane, Barnham (B)	Low
LFRZ_007	Park Road, Barnham	Low
LFRZ_011	West View Drive, Yapton	Low

LFRZ_018 – Oak Tree Lane, Woodgate

Preferred Interventions: Asset Management. Reduce surface water and infiltration entering public foul sewers. Improve surface water conveyance.

Table 10-19 - LFRZ_018 Options

Option Ref.	Option Category (Source / Pathway / Receptor / Other)	Option	Potential	Considered	Economic	Environmental	Objectiveness	Social	Technical	Total Score	Summary of scheme / General discussion
2	Do minimum	Do minimum - continue current maintenance	Yes	Yes	2	2	0	2	1	7	
7	Source	Rainwater Harvesting	Yes	Yes	2	2	1	2	2	9	Installation of water butts in upstream catchment.
12	Source	Sealing of manhole covers and protecting gullies	Yes	Yes	1	2	2	2	1	8	Reduce surface water inflow.
13	Source	Sealing Sewers (Reduce ground water / rainfall induced infiltration)	Yes	Yes	1	2	2	2	0	7	Reduce ground water inflows.
15	Pathway	Increasing Capacity in Drainage System (Storage, Upsize)	Yes	Yes	0	0	2	0	2	4	Investigate conveying surface water away from properties. This should be completed after survey of existing drainage assets. See figure 9.9.
17	Pathway	Improved maintenance regimes	Yes	Yes	-2	0	2	0	2	2	Optimisation of existing assets. WSCC and ADC are planning to clear the ditch on the west side of Lidsey Road
18	Pathway	Increase Gully Assets	Yes	Yes	0	0	2	1	2	5	This should be investigated to remove highway flooding.
22	Pathway	Separation of foul and surface water	Yes	Yes	0	2	2	0	0	4	Control at source see activities 12 & 13
24	Receptor	Improve resilience to flooding	Yes	Yes	2	2	2	2	1	9	To be considered in a hydraulic investigation.
26	Receptor	Raising doorway / access threshold	Yes	Yes	2	2	2	2	1	9	To be considered in a hydraulic investigation.
28	Receptor	Temporary demountable flood defences	Yes	Yes	1	0	2	0	2	5	Potentially applicable.
29	Strategy	Further Study / Investigations	Yes	Yes	1	1	1	1	1	5	Detailed hydraulic investigation is required. As detailed in Option 15.

LFRZ_018 – Oak Tree Lane, Woodgate (Cont.)

Increased Surface Water Conveyance

A: Improve / maintain existing ditch. The conveyance system upgrade may also need to extend further north to the level crossing as the hydraulic model indicates that surface water runoff is predicted to occur north of the railway line. Conveying surface water from Lidsey Road (north of railway crossing) to the south would require construction of a culvert. If practical this would be costly element of works.

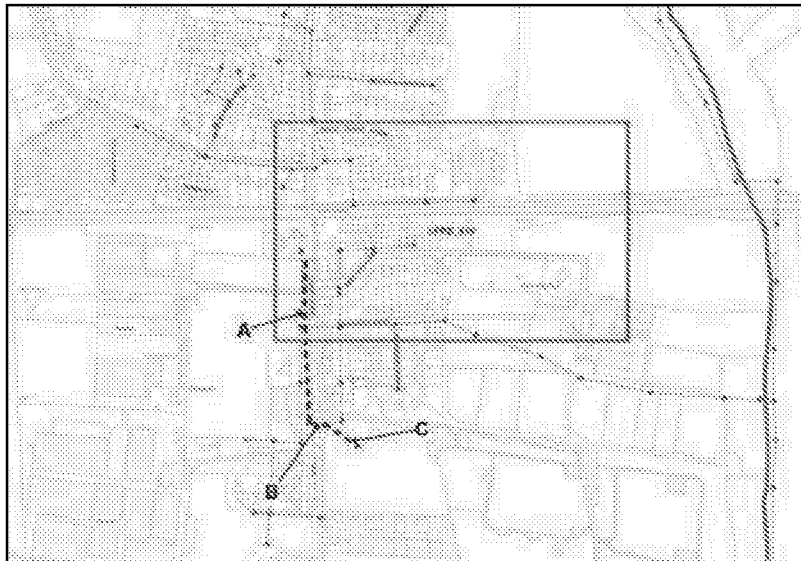
B: New Culvert

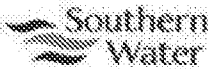
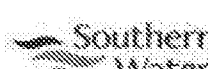
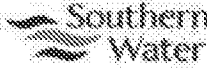
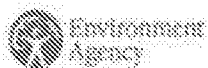
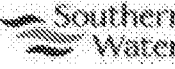
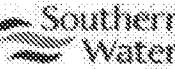
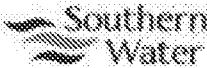
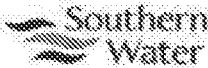
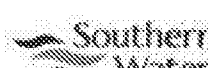
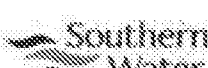
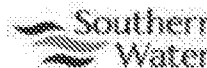
C: Install new ditch to convey water to open green space

Note: This option has not been hydraulically modelled.

WSCC and ADC are planning to clear the ditch on the west side of Lidsey Road and are investigating liaising with land owners to ensure capacity is available downstream of the highway ditch.

Figure 10.9 - Oak Tree Lane, Woodgate



13	LFRZ_004 Maple Road, Walberton	 Carry out a detailed investigation of flooding issue and where required develop hydraulic solution.	 Investigate fat, oil, grease problems reported by residents.	  Investigate and prioritise interventions to reduce clear water inflow and Infiltration of public foul sewers. Work with Local Authority to target resilience improvements.	 Continue proactive maintenance of highway gullies and jetting of sewers to optimise existing drainage assets.	
14	LFRZ_021 Marshalls Close / Church Lane, Barnham	 Investigate the Operation of Marshalls Close CSO	 Investigate options to reduce flood risk as part of the EA 2014 ARIFRM project.	 Investigate additional flood protection measures for two properties in Marshalls Close i.e. sealing floors and walls.		
15	LFRZ_022 Southdean Close, Middleton on Sea	   Confirm surface water drainage arrangements and condition in Southdean Close.	   Consider connecting existing or new highway drainage system into the Rose Avenue public storm water system. The storm system may require upgrade to accommodate increased inflows.	 Consider use of ATAC (Temporary Treatment Plant)		
16	LFRZ_018 Oak Tree Lane, Woodgate	  Survey private road existing highway drainage and confirm condition and arrangements. Implement clearance of the ditch on the west side of Lidsey Road and investigate capacity downstream of the highway ditch	 Area to be considered as part of the DSF study.	  Consider use of flood mitigation to protect properties from pluvial flooding from highway based on outputs from the DSF study	  Investigate and prioritise interventions to reduce clear water inflow and Infiltration of public foul sewers. Work with Local Authority to target resilience improvements.	
17	LFRZ_020 Highground Lane	  Investigate and prioritise interventions to reduce clear water inflow and Infiltration of public foul sewers. Work with Local Authority to target resilience improvements.				
18	LFRZ_012 Yapton Road, Middleton on Sea	 Optimise existing drainage assets. Continue maintenance of ditch system.	 Monitor flooding to evaluate improvements in the ditch system.	 Consider increased conveyance and provide attenuation for surface water flows into the fields to the north or east.	 Consider more gullies along Yapton Lane to intercept highway runoff from Norton Road and Yapton Road.	 Investigate flood mitigations.

Appendix H Environment Agency Correspondence

From: SSD Enquiries <[REDACTED]>
Sent: 31 January 2020 11:22
To: Stuart Burnett
Subject: 200131 SSD156540: D1757 Lidsey Road, Woodgate PO20 3SU (Land at Wings Nursery)

Dear Stuart,

Thank you for your enquiry dated 8 January. This was passed to our technical teams, who have provided the following responses:

GROUNDWATER

- Please confirm details of any groundwater flooding issues in the area, including flood levels, flood extents and any available anecdotal information.
 - We have no recorded evidence, anecdotal or otherwise, of groundwater flooding in this area.
 - The London clay is approximately 120m deep at the area of interest, which would prevent any flooding from the primary aquifer.
 - Over the clay, there is a thinner layer of Fluvial (river) deposits which likely consist of sands, gravels and/or clay. It is possible there may be very localised groundwater activity in these surface deposits.
 - The GW vulnerability layer in Magic Map takes into account these superficial river deposits in the assessment of GW flood risk – [REDACTED].
- Please confirm details of any recorded groundwater levels in the area, and groundwater vulnerability of the area.
 - Please find attached the Groundwater level record for the nearest borehole on the same geology as the site.
 - Please note that the aquifer here is confined below a layer of London clay so the levels attached represent the piezometric surface of the groundwater in the underlying chalk aquifer – not the actual, natural, groundwater level if someone hadn't drilled a hole into it.
 - The piezometric surface is the level at which the groundwater would rise to under hydrostatic pressure if it were not confined beneath the waterproof layer of the clay.

FLOOD ZONES

- Please confirm any gauged flow records for river networks in close proximity to the site
 - Please use the following link to download 15 minute logged flow data for Barnham Rife GS: [REDACTED]
Please note, the above web link will expire on **28 February 2020** so please ensure all data has been downloaded and saved locally by this date.
 - The data ranges from 2002 until March 2019 as it is now only a flow site.
 - There are no other gauges within close proximity to the site
- Please confirm the Flood Zones for this area.
 - We can confirm that the above property/site is located in Flood Zone 1 - an area where the chance of flooding from both rivers and the sea has been assessed as less than 0.1% in any year (1 chance in 1,000 in any year). Please see the attached letter for more information.
 - The Environment Agency has no record of flooding to this property/area, however please note our records are not comprehensive and may not include all events. We recommend

contacting the Lead Local Flooding Authority or the Local Authority for a more comprehensive flood history check.

- Please confirm surface water, reservoir flooding, sewer flooding. Please provide plans and depth data from your GIS UFMSW for 30yr, 100yr & 1000yr as applicable (OS Datum).
 - The site is primarily unaffected by surface water flooding.
 - Please see the attached surface water flood map for more information.

This information is supplied subject to the notice which can be viewed via the following link:

Please get in touch if you would like additional data or contact us within two months if you would like us to review the information we have sent.

Kind Regards,

Amrit

Customers & Engagement Team | Environmental Planning and Engagement | Solent and South Downs Area |
Environment Agency | Romsey District Office, Canal Walk, Romsey, SO51 7LP



From: Stuart Burnett

Sent: 08 January 2020 09:38

To: Enquiries, Unit

Subject: D1757 Lidsey Road, Woodgate PO20 3SU (Land at Wings Nursery)

Dear Sirs,

We are preparing a drainage strategy for the above site and would be grateful if you could provide us with any relevant information you have (via a 'Product 4' for EA only) as per our drainage checklist below:

Flood Zones

- Please confirm the Flood Zones for this area.
- Please confirm surface water, reservoir flooding, sewer flooding. Please provide plans and depth data from your GIS UFMSW for 30yr, 100yr & 1000yr as applicable (OS Datum).
- Please confirm mapping and records for any surface water assets owned or maintained.
- Please confirm if there are any future drainage improvements proposed for this area.
- Please confirm details of existing or planned flood alleviation and defences in this area.
- Please confirm any existing river and/or tidal levels, for the 100yr, 100yr with climate change, 200yr, 200yr with climate change, 1000yr, and 1000yr with climate change flood events.
- Please confirm any gauged flow records for river networks in close proximity to the site, with associated estimated return periods.
- Please confirm if you are aware of any historic flooding within the confines of the site.
- Please confirm if you are aware of any historic flooding in close vicinity and/or on the public highway.

Groundwater

- Please confirm details of any groundwater flooding issues in the area, including flood levels, flood extents and any available anecdotal information.
- Please confirm details of aquifer designation, soil classification, and Source Protection Zones in this area.
- Please confirm details of any surface and groundwater discharges, abstractions including private licences and pollution incidents.
- Please confirm details of any recorded groundwater levels in the area, and groundwater vulnerability of the area.

Policy/Future

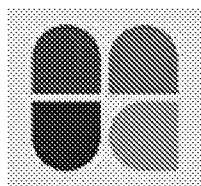
- Please confirm any Flood Modelling data undertaken within a 1 km radius of the site.
- Please confirm details of future defence upgrades and/or shoreline management plans/policies.

We look forward to hearing from you in due course.

Kind regards

Stuart Burnett

Engineer



Bright Plan Civils, Transport Planning and Civil Engineering Consultants

Bright Plan Civils, 2 West Barn, Norton Lane, Chichester, PO20 3AF

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Our reference: SSD158540

SENT BY EMAIL ONLY: [REDACTED]

31 January 2020

Dear Stuart,

Thank you for your request of 8 January to use Environment Agency Product 4 data, for the site at Wings Nursery, Lidsey Road, Woodgate PO20 3SU.

Response to your request

The Environment Agency's records indicate that the above site is located in Flood Zone 1 (land assessed as having less than 0.1% (1 in 1,000) chance of flooding in any given year from **rivers or the sea**). Therefore, the likelihood of flooding from rivers and sea in this area is estimated as 'very low'.

Proximity to Flood Zones 2 or 3

The above site is approximately 340 metres away from Flood Zone 2. We are therefore unable to provide data from our detailed fluvial or tidal models which is relevant to your site.

More information on Flood Zones can be found on the GOV.UK website:

<http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/flood-zone-and-flood-risk-tables/table-1-flood-zones/>

Surface water flooding

Our mapping indicates that this site is at risk of surface water flooding.

For information on flooding from all other sources, such as surface water, please contact the Lead Local Flood Authority, which in this case is West Sussex County Council. A link to their information available online is shown below:

<https://www.westsussex.gov.uk/fire-emergencies-and-crime/dealing-with-extreme-weather/dealing-with-flooding/flood-risk-management/local-flood-risk-management-strategy/>

Please note that the above is a link to an external website which the Environment Agency does not control or maintain. Therefore, the link may not be the most up-to-date at the date of this letter. If the link does not work, and you are unable to find the information about surface water flooding on the relevant website, please contact the authority named above directly.

Where you can find further information

- Detailed long-term flood information and maps can be found on the GOV.UK website:
[REDACTED]
- Flood maps for planning can be found on the GOV.UK website:
[REDACTED]
- Please be aware that in February 2016 the Environment Agency updated its guidance on climate change allowances. The standard allowance of adding 20% to peak flows – as per previous guidance in the National Planning Policy Framework, may not be applicable for the purposes of informing development proposals. It is possible that our current modelling has under estimated flood risk when taking climate change into consideration. This does not however have an effect on Flood Zones 2 or 3. For further information please visit:
[REDACTED]
- Further details about the Environment Agency information supplied can be found on the GOV.UK website:
[REDACTED]
- If you have requested this information to help inform a development proposal, then you should note the information on GOV.UK on the use of Environment Agency information for Flood Risk Assessments:
[REDACTED]

If you have any queries or would like to discuss the content of this letter further please call us on 03708 506 506, or reply to the email sent to you with this letter attached.

Please get in touch if you have any further queries or contact us within two (2) months if you would like us to review the information we have sent.

For information on what you can expect from us and our full service commitment to you, please click on this link:

[REDACTED]

Yours sincerely,

Customers and Engagement Team
Environment Agency

Surface Water Flooding - Map

Legend

- High ($\geq 3.3\%$)
- Medium (3.3% - 1%)
- Low (1% - 0.1%)



1:2,500

0 62
Metres



Appendix I MK Surveys Topographical Survey