

Dandara Southern Ltd

Reading Road, Arborfield

Surface Water Hydraulic Modelling Report

**REPORT REF.
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Document Control Sheet

REV	ISSUE PURPOSE	AUTHOR	CHECKED	APPROVED	DATE
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Distribution

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1. Introduction

- 1.1. Ardent Consulting Engineers (hereafter referred to as Ardent) has been instructed by Dandara Southern Ltd to undertake surface water hydraulic modelling in order to refine and confirm surface water flood risk to support residential development and associated infrastructure in Arborfield.
- 1.2. The site is located at land north of Reading Road in Arborfield, in the Borough of Wokingham in Berkshire. The nearest postcode is RG2 9HN. The site centre grid reference is 475,460E, 167,490N. The site location is shown in Figure 1-1.
- 1.3. Several unnamed ditches run through the southern edge of the site adjacent to Reading Road, moving from east to west. An unnamed ditch originates from Reading Road and flows northward to Church Lane, where it then changes direction to the west. Both of these unnamed watercourses join with the River Loddon, situated approximately 1 km to the west of the site.

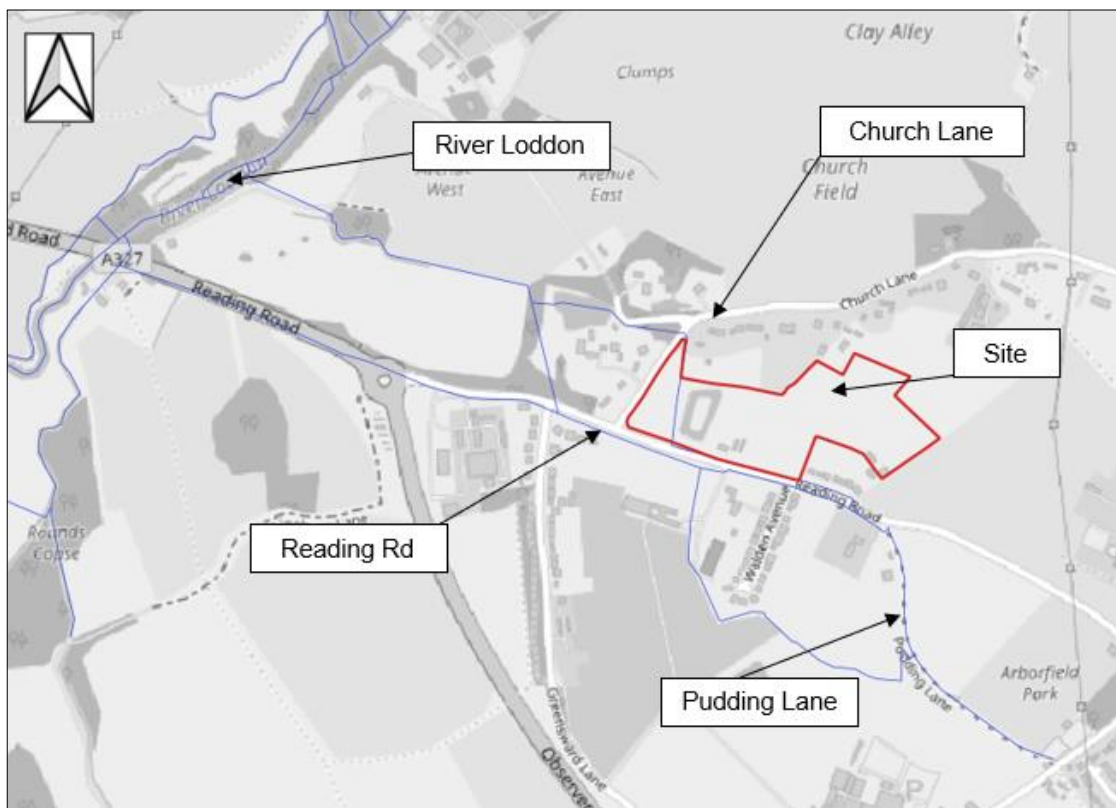


Figure 1-1: Site location plan

- 1.4. The Environment Agency's Risk of Flooding from Surface Water map, displayed on Figure 1-2 indicates that the majority of the site is classified as having a 'very low' risk of surface water flooding. However, there is a significant flow path, categorized as having a 'low' to 'medium' risk of flooding, that crosses the site from east to west, leading to accumulation on the western side, which is classified as having a

'high' flood risk. It is believed that changes in the topography have resulted in the water no longer ponding in this area.

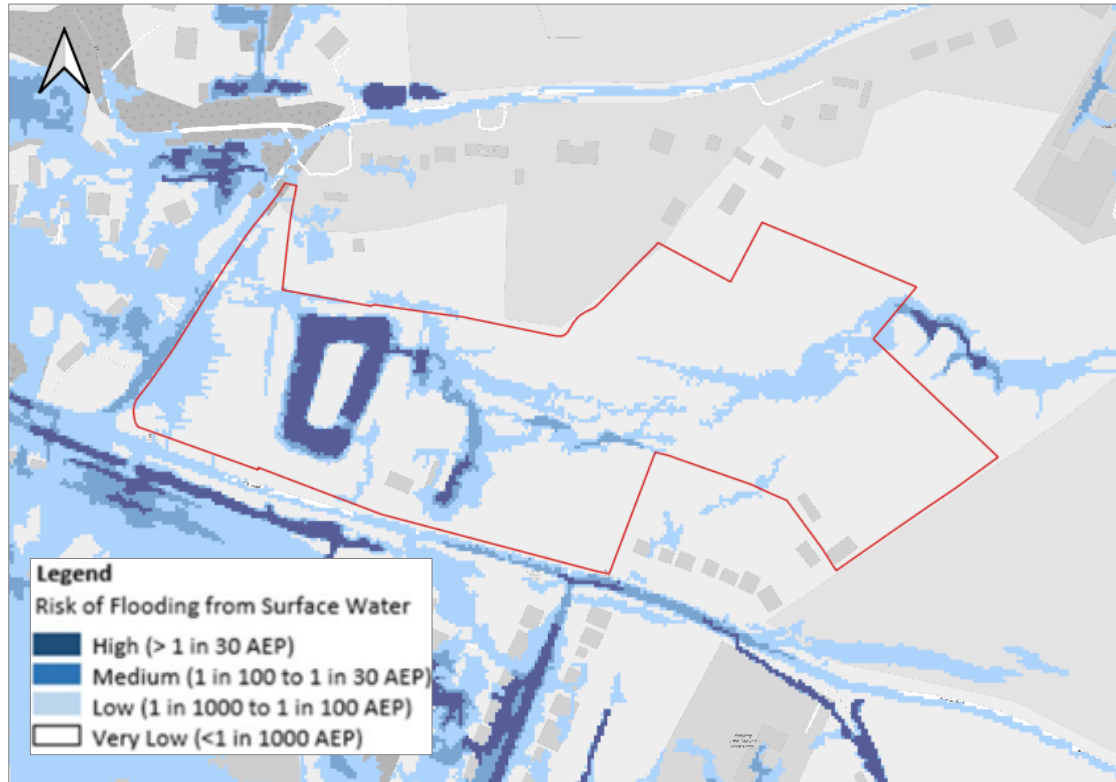


Figure 1-2: Environment Agency Flood Map for Surface Water

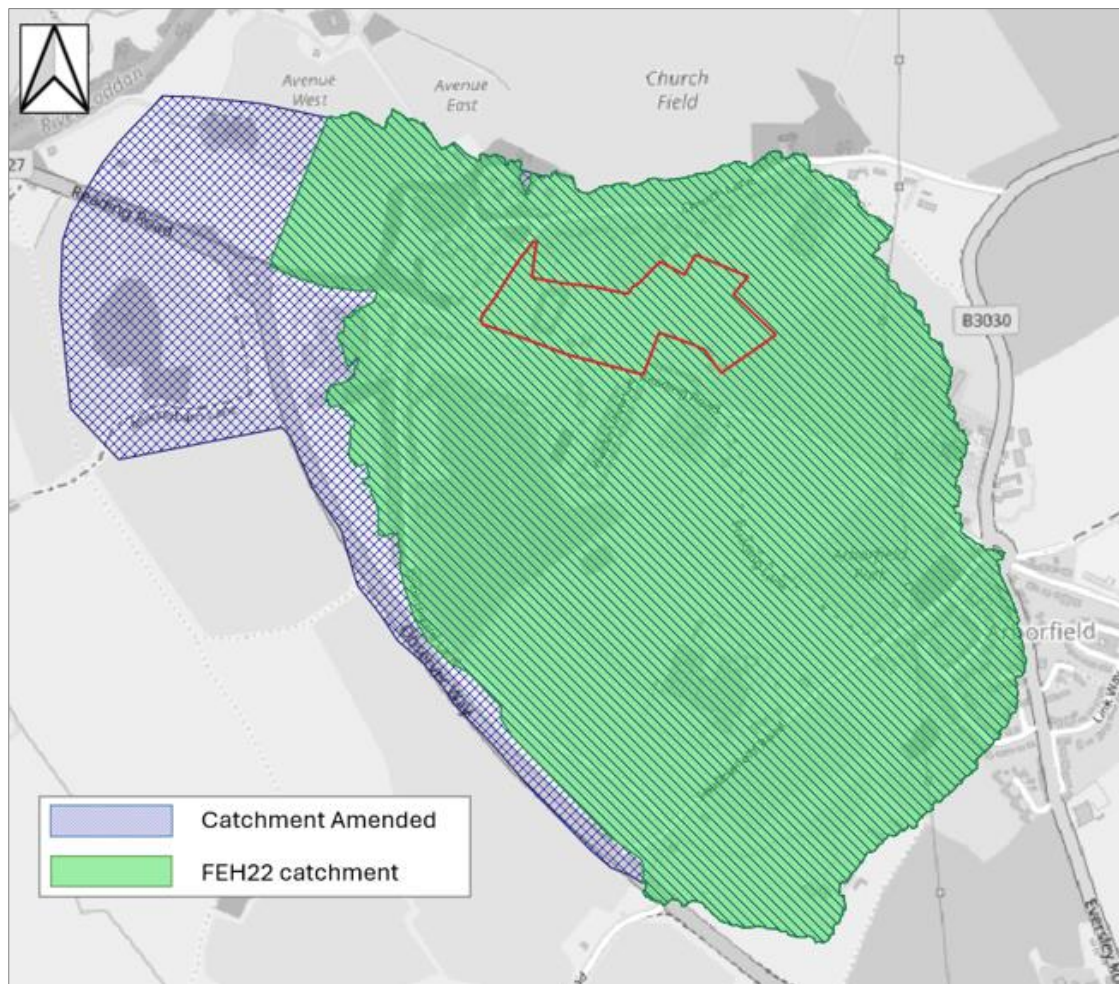
- 1.5. A site-specific assessment of surface water flood risk is necessary due to the high risk of flooding. The impact of the development on flood risk to third-party land will need to be assessed to confirm that flood risk off site is not increased.
- 1.6. Therefore, a detailed 1D-2D linked direct rainfall-runoff model has been developed using TUFLOW software to refine the understanding of surface water flood risk to the site and demonstrate the impact of the development on flood risk to third-party land, to address comments raised by the LLFA.
- 1.7. This report has therefore been prepared in support of a planning application for the development at Reading Road in Arborfield. The proposed development comprises of up to 111 residential dwellings with private gardens, access, open space and associated development infrastructure. See Figure 1-3 for details and Appendix A for details of proposed development.



Figure 1-3: Proposed illustrative masterplan

2. Hydrological Assessment

- 2.1. To inform the hydraulic modelling and assess surface water flood risk to the site, rainfall hyetographs were derived to input to the model.
- 2.2. FEH22 catchment descriptor data for the coordinates 474950, and 167750 covering the site was obtained from the Flood Estimation Handbook (FEH) Web Service.
- 2.3. A catchment analysis was undertaken using catchment delineation tools within QGIS to determine the catchment area draining to the site based on a 1m EA LIDAR DTM from 2022.
- 2.4. The derived catchment area is 1.563km², compared to 1.249km² as taken from the FEH catchment. The FEH catchment and adjusted catchment boundary are shown in



- 2.5. Figure 2-1. The catchment descriptors were assessed against available data and considered appropriate.

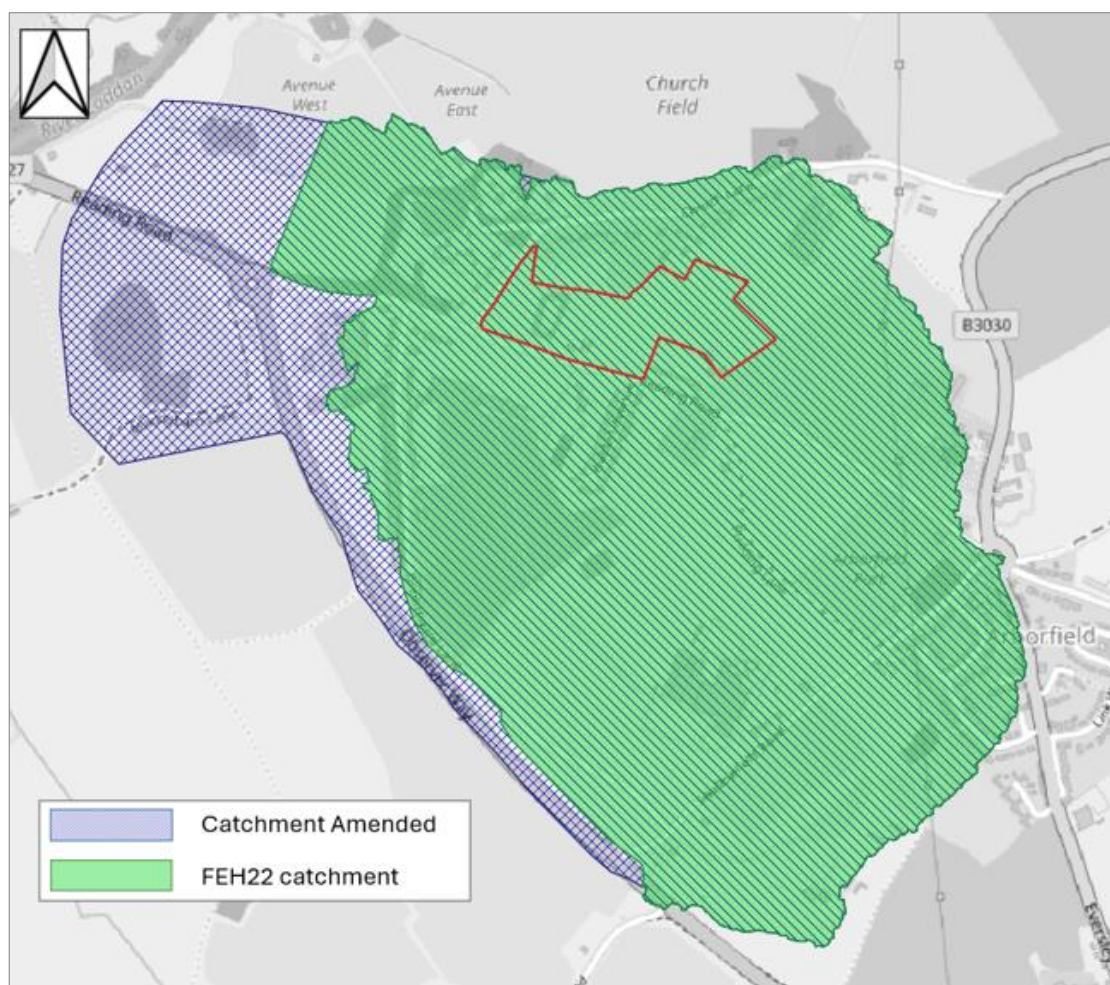


Figure 2-1: Estimated catchment boundary

- 2.6. The FEH22 data was inputted to the Revitalised Flood Hydrograph 2 (ReFH2) software, which was used to derive rainfall hyetographs for the 3.33%, 1%, and 0.1% Annual Exceedance Probability (AEP) events.
- 2.7. Rainfall hyetographs were also derived for the 3.33% AEP event uplifted by 35% and the 1% AEP event uplifted by 40% to account for the potential impacts of climate change, in line with the latest EA guidance for the 2070s epoch upper-end allowance in the Loddon and tributaries Management Catchment¹.
- 2.8. A winter storm profile was used to derive the hyetographs as the FEH Catchment is classed as moderately urbanised (i.e. URBEXT2000 <0.15). Additionally, the site and area draining towards it is in majority rural.
- 2.9. The default storm duration for the catchment is 5.5 hours. Hyetographs were also derived for a 1.5-hour, 2.5-hour, 3.5-hour, 4.5-hour, and 6.5-hour storm duration,

¹ Loddon and tributaries Management Catchment peak rainfall allowances, Environment Agency. Available: <https://environment.data.gov.uk/hydrology/climate-change-allowances/rainfall?mgmtcatid=3048>

with all durations tested within the model for the 1% AEP plus 40% climate change event in the post-development model. The sensitivity runs found the 2.5-hour storm event resulted in the highest peak flood depths at key locations in the site, with this therefore used as the final design storm duration.

- 2.10. The design rainfall was exported from ReFH2, with losses then applied within the model domain. An example ReFH2 report for the 1% AEP plus 40% climate change is provided in Appendix B, including details of the catchment descriptor data.

3. Baseline model build

- 3.1. The baseline model has been built using the hydraulic modelling software TUFLOW using the latest version of the software 2023-03-AF-iSP-w64 (at the time of the model built). A model schematic is shown in Figure 3-1.

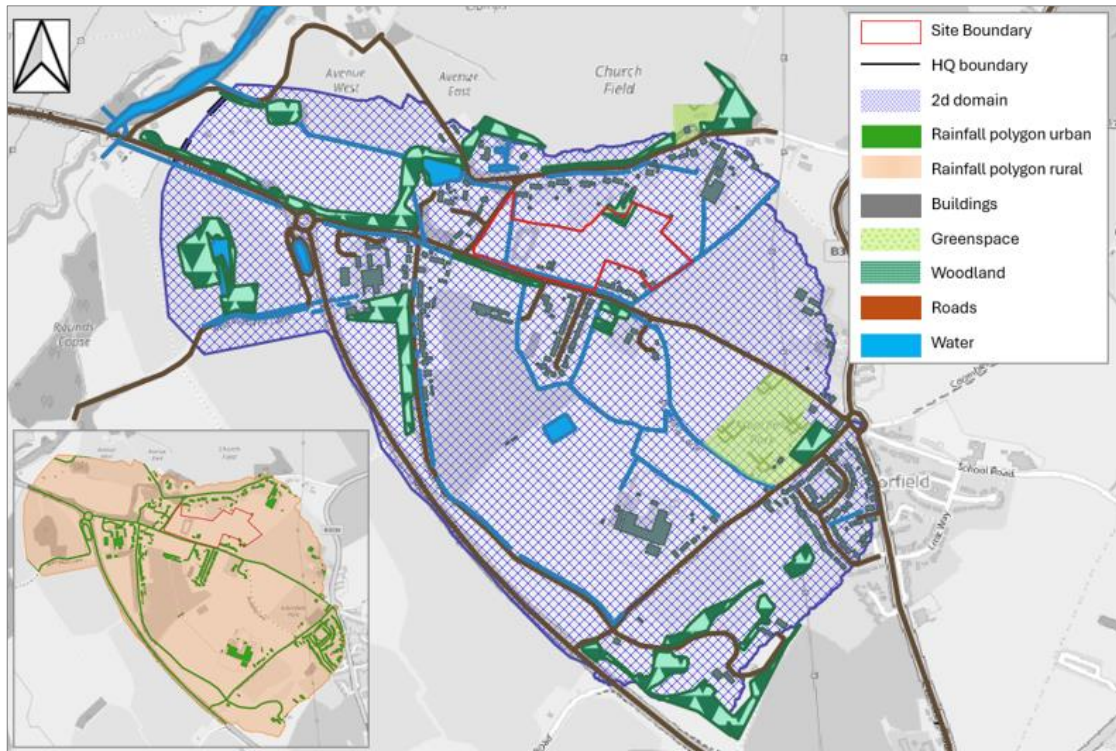


Figure 3-1: Model schematic

1D build

- 3.2. The hydraulic model incorporates one culvert at the existing site entrance onto Reading Road. The diameter of the culvert as well as upstream and downstream invert levels were determined from the topographical survey.

2D build

- 3.3. The wider catchment is represented in the 2D domain and covers an area of 1.563 km², including the entire catchment derived as shown in Section 2.
- 3.4. The ground model at the site has been informed using a topographic survey collected by NRS Surveying Limited, in November 2024 (see Appendix B). Some adjustments to the ground model have been incorporated as per Figure 3-2.

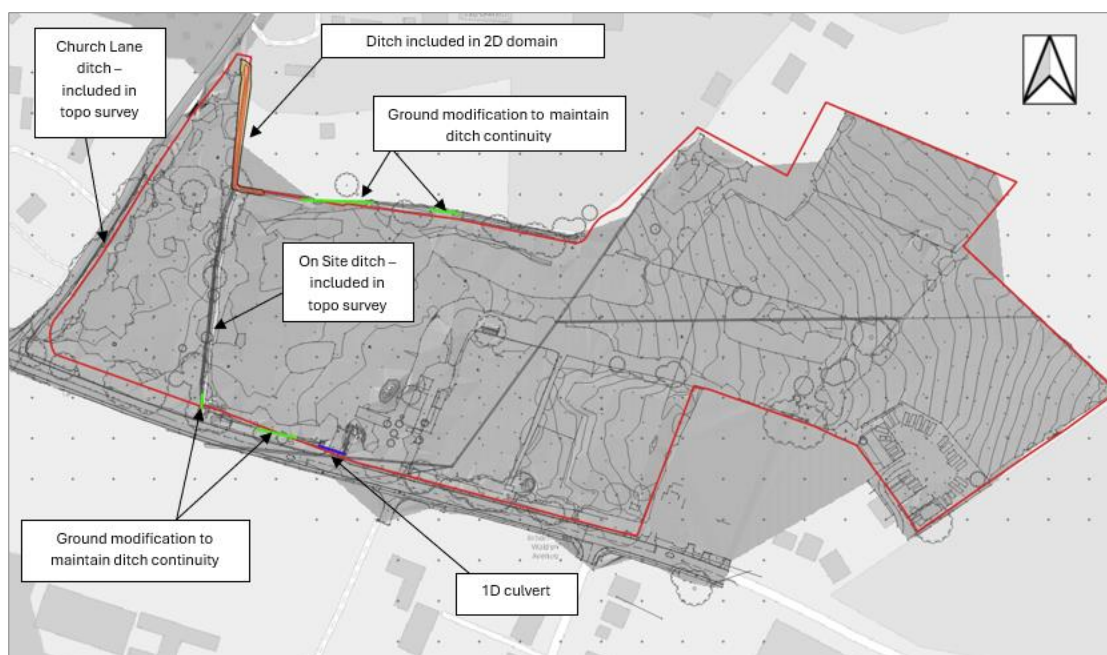


Figure 3-2: A topographic survey modification

- 3.5. Elevations across the wider catchment were derived from the 2022 EA 1m LIDAR DTM.
- 3.6. A 1m cell size has been applied across the model, ensuring surface water flow paths are adequately represented.
- 3.7. Different land uses derived from topographic surveys and OS VectorMapping across the model domain have been assigned roughness values within the 2D domain (see Figure 3-1). The values applied are shown in Table 3-1.

Table 3-1: 2D Manning's 'n' roughness values

Land use	Manning's 'n' roughness value
General	0.045
Greenspace	0.055
Woodland	0.100
Roads	0.040
Water	0.030
Buildings	0.300

- 3.8. Ground levels at buildings in the wider model domain have been raised by 0.3m in line with the approach used in the EA's RoFSW mapping.

Boundary conditions

- 3.9. The final design rainfall hyetographs outlined in Section 2 were directly implemented across the entire 2D model domain, without any additional inflows introduced.
- 3.10. The entire model was rendered impermeable by assigning a soil parameter value of 99. Two distinct rainfall polygons were established—urban and rural.
- 3.11. The designed rainfall was applied to impermeable urban surfaces, such as roads and buildings. To account for infiltration losses and storage within urban environments, including gutters and drains, 90% of the total design rainfall hyetograph was allocated to these urban areas.
- 3.12. The rural net rainfall that accounts for soil characteristic at certain regions was applied to rural area.
- 3.13. To allow runoff to pass out of the 2D domain an HQ boundary was applied at the Reading Road and extended further north across the green area.

Assumptions/Limitations

- 3.14. The representation of any complex system by a model requires several assumptions to be made. In the case of the 1D and 2D elements of the model, the following assumptions have been made:
 - Model parameters, such as roughness and structure coefficients, are representative of the general conditions;
 - The units used to represent hydraulic structures within the model represent the situation accurately using the available information, including assumptions made to simplify representations where necessary;
 - The design hydrology accurately represents flows in the models given there was no flow/level data available for the catchment to calibrate flows in the model;
 - The LIDAR and OS mapping are representative of the land surface and are an up-to-date reflection of current ground levels and land uses.

4. Baseline modelling results

Hydraulic Modelling Results

- 4.1. The baseline modelling results provide an analysis of surface water flows on the site under pre-development conditions, excluding any considerations for mitigation or additional drainage infrastructure.
- 4.2. The model has been run using the TUFLOW HPC solver with GPU. The model is run for a total duration of 10 hours to allow the full storm event to pass through the site. Model results have been filtered to remove depths below 0.05m.
- 4.3. Peak flood extents for the modelled storm events are shown in Figure 4-1.



Figure 4-1: Baseline model flood extents

- 4.4. The flood outlines shown above are as a result of surface water flow paths predicted to originate from offsite and impact the site.
- 4.5. The primary flow path is entering the site from the northeast flowing westward towards Church Lane.
- 4.6. A secondary flow path originates from Reading Road, directing water northward to merge with the primary flow path before continuing toward Church Lane. Water accumulates in a lower elevation area located east of the onsite ditch, from which it subsequently flows into the ditch.

- 4.7. Additionally, the ponding area to the west of the ditch is primarily formed by water overflowing from the onsite ditch, which then spills onto Church Lane and continues toward the River Loddon.
- 4.8. Peak modelled flood depths during the 1% AEP plus 40% climate change event are presented in Figure 4-2. Peak depths across the site are generally shallow, with depths along flow paths typically <0.30m. The greatest depths are predicted in a topographic depression along the ditch on the western side of the site along Church Lane where water ponds.

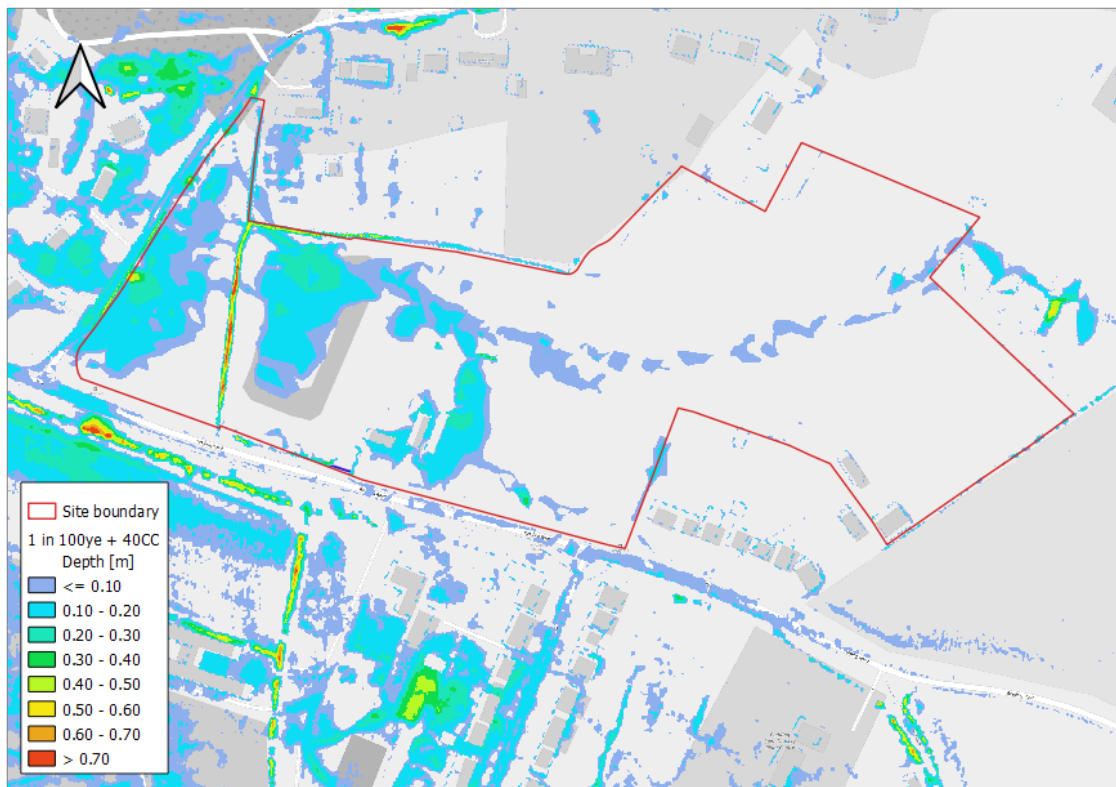


Figure 4-2: Peak modelled depths – 1% AEP plus 40% climate change

Model stability

- 4.9. A review of the model outputs indicates the modelling is stable for the duration of the event, with total mass errors between 0.0% and 0.0%, and timestep efficiency above 99% after the model initialisation. The model runs have no negative depths.

5. Sensitivity analysis

- 5.1. It is standard hydraulic modelling practice to undertake a sensitivity analysis of key model parameters to consider any uncertainty attached to the adopted values and understand how sensitive the model is to changes in these parameters.
- 5.2. In the absence of any gauged data / recorded flood events / observable historical information, Ardent have undertaken a sensitivity test of key parameters in order to improve confidence in the model outputs and to ensure the model is robust to changes in these parameters. All sensitivity runs have been undertaken on the 1% AEP plus 40% climate change event during the baseline scenario.
- 5.3. Ardent has undertaken a sensitivity analysis on the following parameters for the post-development scenario:
- Critical storm duration; and,
 - Manning's 'n' roughness values +/- 20%.

Critical storm duration

- 5.4. To determine the worst-case scenario storm event for flood risk on site, critical storm duration testing was undertaken. The 1% AEP plus 40% climate change event was run for storm durations of 1.5 hours, 2.5 hours, 3.5 hours, 4.5 hours and 5.25 hours.
- 5.5. The model results show a storm duration of 2.5 hours resulted in the greatest predicted flood depths at key areas across the site. As a result, a 2.5-hour storm duration was used for all design rainfall events applied to the model.

Manning's 'n' roughness

- 5.6. Manning's 'n' roughness values have been adjusted by +/- 20% in the 2D domains. The peak modelled extents from the sensitivity testing are shown in Figure 5-1 with peak depths at the result points shown in Table 5-1.

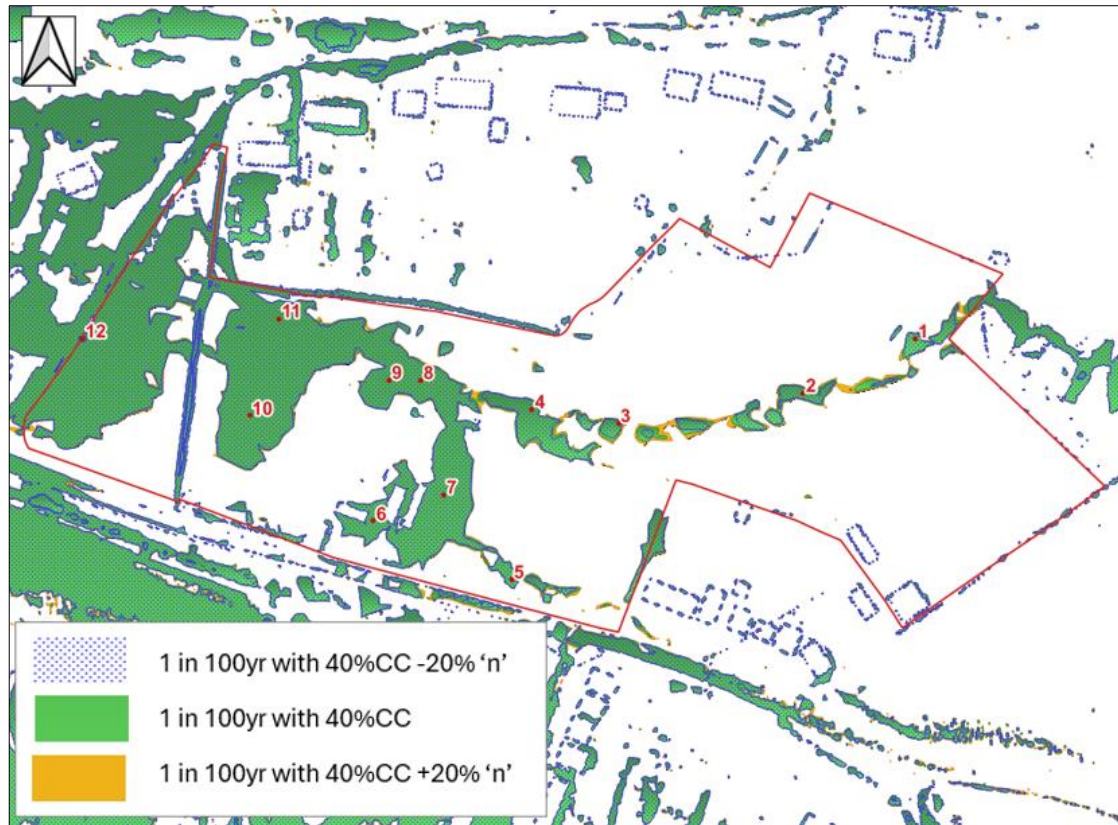


Figure 5-1: Roughness sensitivity extents – 1% AEP plus 40% climate change

Table 5-1: Roughness sensitivity peak depths at points shown in Figure 5-1

Point	-20% 'n'	1% AEP plus 40% CC	+20% 'n'
	Depth (m)		
1	0.216	0.219	0.221
2	0.081	0.087	0.091
3	0.061	0.066	0.069
4	0.128	0.133	0.137
5	0.341	0.345	0.349
6	0.175	0.178	0.181
7	0.264	0.269	0.272
8	0.110	0.116	0.121
9	0.207	0.209	0.211
10	0.157	0.161	0.165
11	0.212	0.217	0.220
12	0.560	0.561	0.565

- 5.7. The results show the model has a low sensitivity to the roughness values applied to the model domain, with only minor changes in the peak flood extents and negligible differences in peak flood depths at key locations across the site.

Sensitivity test conclusions

- 5.8. Ardent has carried out a range of sensitivity tests on key parameters for the hydraulic model in order to test the validity of the model outputs and ensure that the model fits for purpose. The review of the sensitivity test outlined above suggests that the adopted model parameters are appropriate, and the model is not sensitive to parameter change.

6. Post-development model scenario

- 6.1. To assess the surface water flood risk to the development proposals and demonstrate the impacts on flood risk to third-party land the proposed development was represented within the model, including associated flood risk mitigation measures.
- 6.2. The development proposals were aligned with the masterplan supplied by the Client (refer to Appendix A) and included mitigation measures such as drainage systems along the site boundaries and main access roads. Several culverts have been incorporated to channel water through the on-site swale network. This system is designed to manage overland surface water only, which will flow into a surface water basin, before being directed to the on-site ditch. Drainage from the development will discharge into a separate basin. Both the surface water basin (north) and the drainage basin (south) are incorporated into the model. A post-development model schematic is provided in Figure 6-1 and Outline Drainage Strategy Layout in Figure 6-2 and in Appendix D.



Figure 6-1: Post-development model schematic based on illustrative masterplan

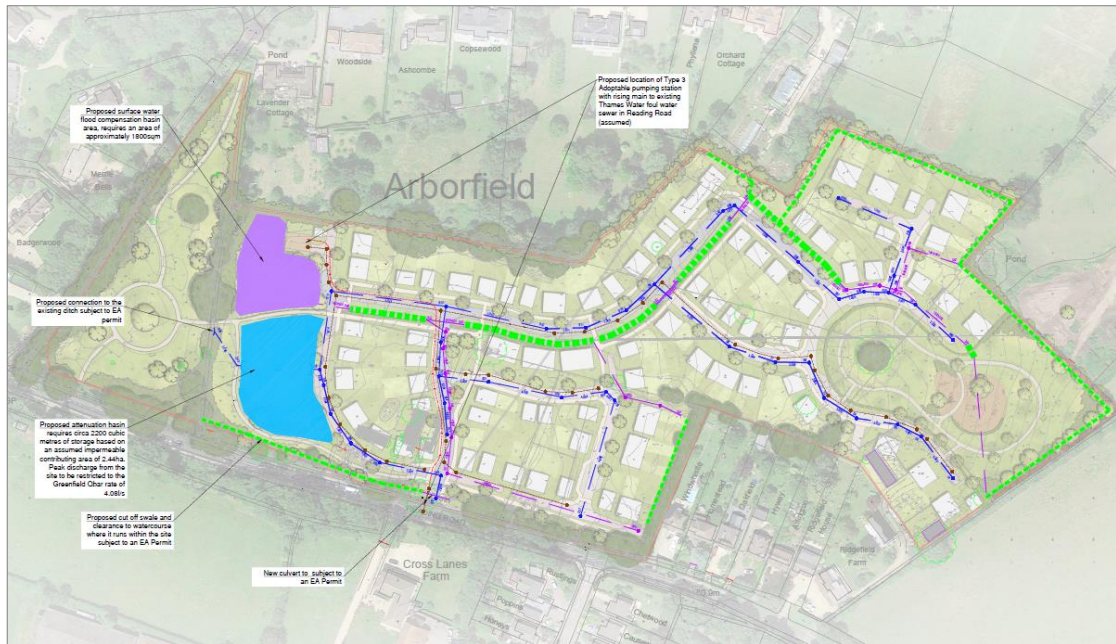


Figure 6-2: Outline Drainage Strategy Layout (showing both surface water system and development outline drainage strategy)

1D domain updates

- 6.3. The overland surface water proposal incorporate a number of swales and culverts (see Figures above). Culverts are represented in the 1D domain. Invert levels for culverts are determined based on the proposed development levels and drainage strategy provided by the RCP Engineers. The Manning's 'n' values of 0.015 are allocated. See Appendix D for the outline drainage strategy.
- 6.4. To represent inflows to the culverts, SX lines have been used to connect the 2D cells along the length of each run of pipe into the 1D pipe network. SX 'Z' flag was applied to meet the TUFLOW criteria for connecting SX cells into the 1D domain.
- 6.5. All swales channel overland flow towards the proposed flood compensation basin (north basin), which has an approximate area of 1800 m². The discharge from the flood compensation basin will be channelled into the on-site ditch.

2D domain updates

- 6.6. The proposed development is represented by the '.asc' ground model which is based on the proposed triangulated levels. The proposed basins in the west part of the site are included in the '.asc' file.
- 6.7. The majority of swales are represented in the '.asc' grid supplied by the RCP Engineers, with an additional ground lowering of 0.5m incorporated into the hydraulic model. Further ground lowering using '.zpt' lines was discussed and

subsequently integrated into the model after the creation of the '.asc' grid. Building FFL's are represented by the '.asc' grid and are set above the adjacent ground level.

- 6.8. The 2D roughness files were updated within the site boundary to reflect the proposed buildings, hardstanding and permeable open spaces. Manning's 'n' values were applied in line with the baseline scenario.
- 6.9. The urban and rural rainfall polygons within the site boundary have also been updated. These areas were also set to have no rainfall applied to them, as it is assumed that any rainfall landing on these areas will be managed by the on-site surface water drainage network.

7. Post development modelling results

7.1. Peak flood extents during the post-development scenario for the modelled storm events are shown in Figure 7-1.



Figure 7-1: Post-development peak modelled flood extents

- 7.2. The main flow routes are now directed through a network of swales to the flood compensation basin, from which water is released via a 0.5m diameter culvert into the existing onsite ditch.
- 7.3. The hydraulic model does not include the onsite rainfall and therefore does not take into account the drainage network either. Residential buildings are shown to remain dry during all the modelled events. The water flows out of the site as in the baseline scenario.
- 7.4. The peak modelled flood depths during the 1% AEP plus 40% climate change event are shown in Figure 7-2, along with peak flood levels at locations across the site.

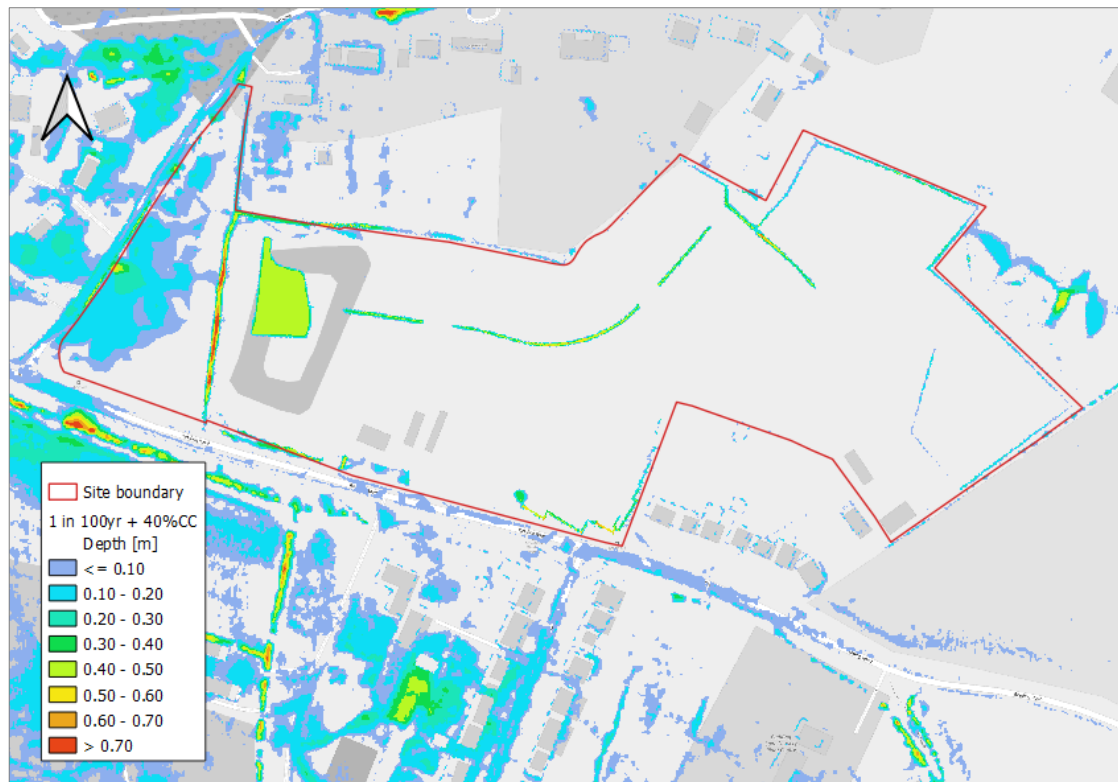


Figure 7-2: Post-development peak depths and extents - 1% AEP plus 40% CC

- 7.5. The results show that during the 1% AEP plus 40% climate change event, peak depths at the basin are predicted to be of up to 500mm. The overland flow basin includes 300mm freeboard. As the basin is located at the lowest part of the site, residential properties are above the maximum basin water level.
- 7.6. Depths greater than 500mm are predicted along the existing drains.

Comparison Plots

- 7.7. Comparison mapping showing the change in peak flood depths between the baseline and post-development scenario during the 1% AEP plus 40% climate change scenario is presented in Figure 7-3.
- 7.8. The results demonstrate that the proposed development is not expected to adversely affect flood risk to third-party land, with the exception of minor increases in certain areas, specifically to the south of Reading Road and at the existing site entrance on Reading Road. The off-site increases are of up to 0.05m during peak flows only. There is no risk to residential properties. The off-site risk will be minimised during the detailed design phase.
- 7.9. The on-site water depths are predicted to increase primarily in the locations of the proposed basin and new swales along the planned roadways. Conversely, the peak

water depths along the flow paths at Church Lane are predicted to be lower. This reduction is primarily linked to the decrease in runoff produced from the site, attributed to the implementation of the proposed onsite drainage system in addition to the overland flow mitigation scheme.

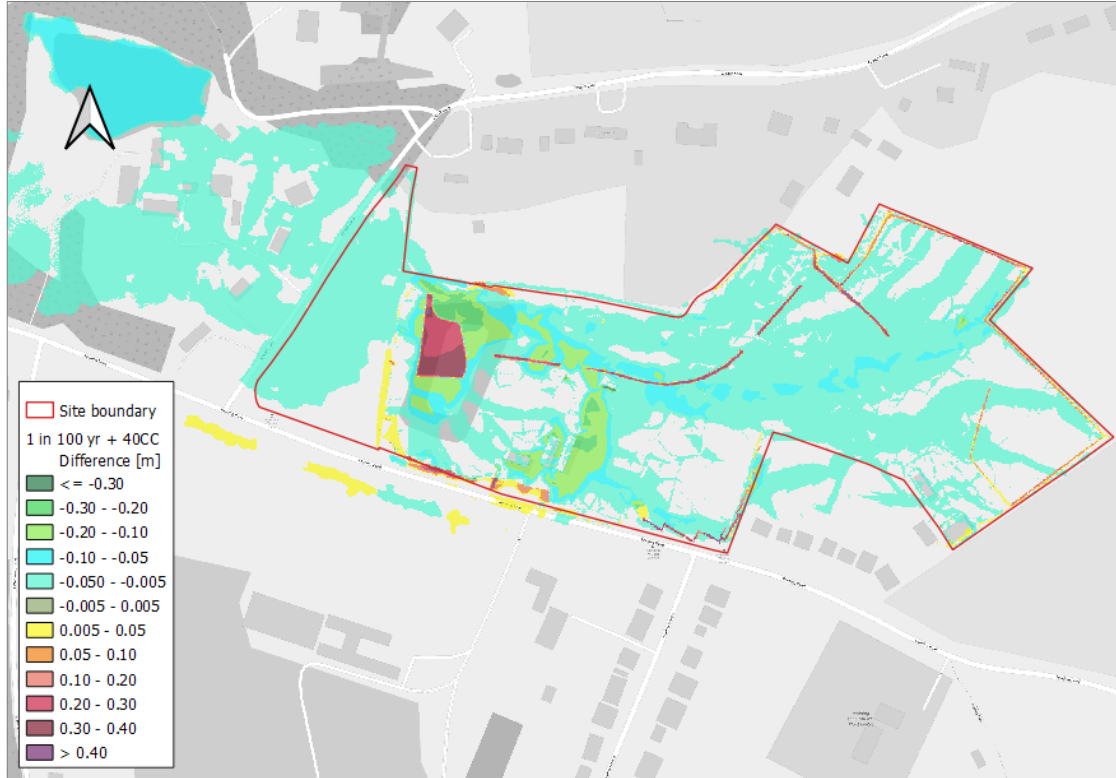


Figure 7-3: Change in peak flood depths – 1% AEP plus 45% climate change

Hazard Ratings

- 7.10. The peak modelled flood hazard during the 1% AEP plus 40% climate change event in the post-development scenario is shown in Figure 7-4. The peak modelled flood hazard is predicted to remain low during the design storm event across almost the entire site, meaning there is minimal risk to the site users. All site users are shown to have access to Reading Road via areas where flood depths are predicted to remain below 0.05m during the 1% AEP plus 40% climate change event.

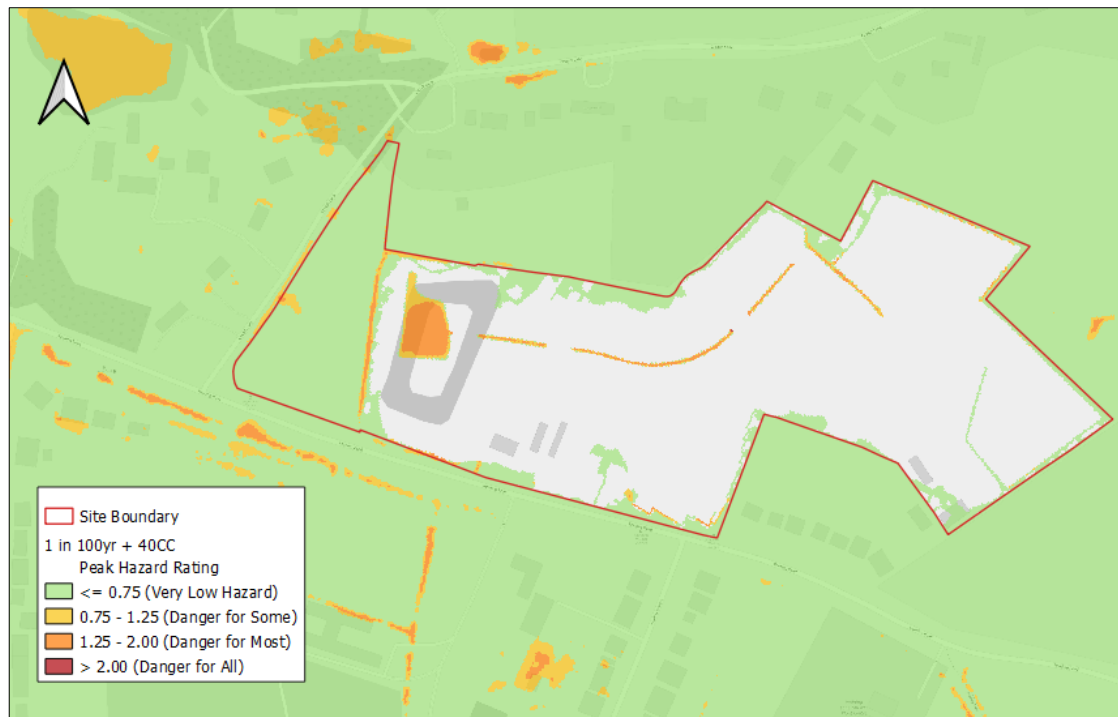


Figure 7-4: Post-development peak flood hazard – 1% AEP plus 40% CC

Model stability

- 7.11. A review of the model outputs indicates the modelling is stable for the duration of the event, with total mass errors of -0.01% to 0.01% and timestep efficiency above 99% after the model initialisation. The model runs have no negative depths.

8. Conclusions

- 8.1. Ardent Consulting Engineers has been instructed by Dandara Southern Ltd to undertake surface water hydraulic modelling in order to refine and confirm surface water flood risk to support residential development and associated infrastructure in Arborfield.
- 8.2. A detailed 1D-2D linked direct rainfall-runoff model has been developed using TUFLOW software to refine the understanding of surface water flood risk to the site and demonstrate the impact of the development on flood risk to third-party land.
- 8.3. A hydrological analysis has also been undertaken to derive rainfall hyetographs for the study area.
- 8.4. A baseline hydraulic model has been built using a combination of LIDAR data and topographical survey data.
- 8.5. The hydraulic model has identified a surface water flow paths predicted to originate from offsite and impact the site. The primary flow path is entering the site from the northeast flowing westward towards Church Lane. A secondary flow path originates from Reading Road, directing water northward to merge with the primary flow path before continuing toward Church Lane. Water accumulates in a lower elevation area located east of the onsite ditch, from which it subsequently flows into the ditch.
- 8.6. Additionally, the ponding area to the west of the ditch is primarily formed by water overflowing from the onsite ditch, which then spills onto Church Lane and continues toward the River Loddon.
- 8.7. Peak depths across the site are generally shallow, with depths along flow paths typically <0.30m. The greatest depths are predicted in a topographic depression along the ditch on the western side along Church Lane where water ponds.
- 8.8. Sensitivity testing of boundary conditions, Manning's 'n' roughness values and critical storm duration has been carried out. The results of the analysis show that the model is not overly sensitive to changes in these parameters and that is fit for purpose.
- 8.9. The proposed development scenario has been represented in the model by including triangulated elevation points representing levels on site. The flood risk mitigation measures such as swales and detention basins were represented in the 2D domain with linking culverts in the 1D domain.

- 8.10. The overland surface water mitigation swales and basin are maintained independently from the development drainage basin, ensuring that only the effects of surface water are evaluated.
- 8.11. The results show that during the 1% AEP plus 40% climate change event, peak depths at the basin are predicted to be of up to 500mm. Depths greater than 500mm are predicted along the existing onsite ditch.
- 8.12. The development proposals have indicated slight increases in water levels at the ditch located south of Reading Road and at the current site entrance on Reading Road. There is no risk to residential properties. Otherwise, no offsite increases are observed during the 1% AEP plus 40% climate change scenario. There are reductions in flood depths along the baseline flow paths. On-site increases of up to 400mm are primarily limited to the swales and the proposed detention basin areas.

Appendix A



Appendix B

UK Design Flood Estimation

Generated on 04 December 2024 14:13:12 by jaxton
Printed from the ReFH2 Flood Modelling software package, version 4.1.8879.22310

Summary of estimate using the Flood Estimation Handbook revitalised flood hydrograph method (ReFH2)

Site detailsChecksum: 594B-537E

Site name: FEH_Catchment_Descriptors_474950_167750_v5_0_1_Edited

Easting: 474950

Northing: 167750

Country: England, Wales or Northern Ireland

Catchment Area (km²): 1.25

Using plot scale calculations: No

Model: 2.3

Site description:None

Model run: 100 year 1.4 CC

Summary of results

Rainfall - FEH22 (mm):	81.43	Total runoff (ML):	29.66
Total Rainfall (mm):	48.75	Total flow (ML):	60.87
Peak Rainfall (mm):	4.13	Peak flow (m³/s):	1.75

Parameters

Where the user has overridden a system-generated value, this original value is shown in square brackets after the value used.
* Indicates that the user locked the duration/timestep

Rainfall parameters (Rainfall - FEH22)

Name	Value	User-defined?
Duration (hh:mm:ss)	02:35:00 [05:30:00]	Yes
Timestep (hh:mm:ss)	00:05:00 [00:30:00]	Yes
SCF (Seasonal correction factor)	0.62	No
ARF (Areal reduction factor)	0.97	No
Seasonality	Winter	No
Climate change factor	1.40	Yes

Loss model parameters

Name	Value	User-defined?
Cini (mm)	122.7	No
Cmax (mm)	316.59	No
Use alpha correction factor	No	No
Alpha correction factor	n/a	No

Routing model parameters

Name	Value	User-defined?
Tp (hr)	3.07	No
Up	0.65	No
Uk	0.8	No

Baseflow model parameters

Name	Value	User-defined?
BF0 (m ³ /s)	0.05	No
BL (hr)	30.99	No
BR	1.15	No

Urbanisation parameters

Name	Value	User-defined?
Sewer capacity (m ³ /s)	0	No
Exporting drained area (km ²)	0	No
Urban area (km ²)	0.19	No
Effective URBEXT2000	0.1	n/a
Impervious runoff factor	0.7	No
Imperviousness factor	0.4	No
Tp scaling factor	0.75	No
Depression storage depth (mm)	0.5	No

Time series data

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m³/s)	Net Rain (mm)	Runoff (m³/s)	Baseflow (m³/s)	Total Flow (m³/s)
00:00:00	0.318	0.000	0.129	0.000	0.044	0.044
00:05:00	0.383	0.000	0.157	0.000	0.043	0.044
00:10:00	0.460	0.000	0.191	0.001	0.043	0.044
00:15:00	0.552	0.000	0.231	0.002	0.043	0.045
00:20:00	0.663	0.000	0.278	0.003	0.043	0.046
00:25:00	0.795	0.000	0.335	0.005	0.043	0.048
00:30:00	0.952	0.000	0.404	0.007	0.043	0.050
00:35:00	1.141	0.000	0.488	0.011	0.043	0.054
00:40:00	1.364	0.000	0.589	0.016	0.043	0.058
00:45:00	1.630	0.000	0.711	0.021	0.043	0.064
00:50:00	1.945	0.000	0.858	0.029	0.043	0.071
00:55:00	2.316	0.000	1.037	0.038	0.043	0.080
01:00:00	2.749	0.000	1.252	0.049	0.043	0.091
01:05:00	3.248	0.000	1.509	0.063	0.043	0.105
01:10:00	3.796	0.000	1.804	0.080	0.043	0.123
01:15:00	4.131	0.000	2.013	0.101	0.043	0.143
01:20:00	3.796	0.000	1.895	0.126	0.043	0.169
01:25:00	3.248	0.000	1.656	0.156	0.043	0.199
01:30:00	2.749	0.000	1.426	0.189	0.043	0.233
01:35:00	2.316	0.000	1.219	0.227	0.044	0.270
01:40:00	1.945	0.000	1.037	0.267	0.044	0.311
01:45:00	1.630	0.000	0.878	0.310	0.045	0.355
01:50:00	1.364	0.000	0.741	0.355	0.046	0.400
01:55:00	1.141	0.000	0.624	0.402	0.046	0.448
02:00:00	0.952	0.000	0.524	0.450	0.047	0.497
02:05:00	0.795	0.000	0.439	0.500	0.048	0.548
02:10:00	0.663	0.000	0.368	0.551	0.049	0.600
02:15:00	0.552	0.000	0.307	0.602	0.051	0.653
02:20:00	0.460	0.000	0.257	0.655	0.052	0.707
02:25:00	0.383	0.000	0.214	0.708	0.054	0.762
02:30:00	0.318	0.000	0.178	0.761	0.055	0.817
02:35:00	0.000	0.000	0.000	0.815	0.057	0.872
02:40:00	0.000	0.000	0.000	0.869	0.059	0.928
02:45:00	0.000	0.000	0.000	0.922	0.061	0.983

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
02:50:00	0.000	0.000	0.000	0.975	0.063	1.038
02:55:00	0.000	0.000	0.000	1.027	0.066	1.093
03:00:00	0.000	0.000	0.000	1.079	0.068	1.147
03:05:00	0.000	0.000	0.000	1.130	0.071	1.201
03:10:00	0.000	0.000	0.000	1.180	0.073	1.254
03:15:00	0.000	0.000	0.000	1.229	0.076	1.305
03:20:00	0.000	0.000	0.000	1.277	0.079	1.356
03:25:00	0.000	0.000	0.000	1.322	0.082	1.404
03:30:00	0.000	0.000	0.000	1.365	0.085	1.451
03:35:00	0.000	0.000	0.000	1.406	0.088	1.494
03:40:00	0.000	0.000	0.000	1.443	0.092	1.535
03:45:00	0.000	0.000	0.000	1.478	0.095	1.573
03:50:00	0.000	0.000	0.000	1.509	0.099	1.608
03:55:00	0.000	0.000	0.000	1.537	0.103	1.639
04:00:00	0.000	0.000	0.000	1.561	0.106	1.668
04:05:00	0.000	0.000	0.000	1.582	0.110	1.693
04:10:00	0.000	0.000	0.000	1.599	0.114	1.714
04:15:00	0.000	0.000	0.000	1.612	0.118	1.730
04:20:00	0.000	0.000	0.000	1.620	0.122	1.742
04:25:00	0.000	0.000	0.000	1.622	0.126	1.748
04:30:00	0.000	0.000	0.000	1.619	0.131	1.749
04:35:00	0.000	0.000	0.000	1.610	0.135	1.745
04:40:00	0.000	0.000	0.000	1.598	0.139	1.737
04:45:00	0.000	0.000	0.000	1.582	0.143	1.725
04:50:00	0.000	0.000	0.000	1.563	0.147	1.710
04:55:00	0.000	0.000	0.000	1.542	0.151	1.693
05:00:00	0.000	0.000	0.000	1.519	0.155	1.673
05:05:00	0.000	0.000	0.000	1.494	0.159	1.652
05:10:00	0.000	0.000	0.000	1.467	0.162	1.630
05:15:00	0.000	0.000	0.000	1.440	0.166	1.606
05:20:00	0.000	0.000	0.000	1.411	0.170	1.581
05:25:00	0.000	0.000	0.000	1.382	0.173	1.555
05:30:00	0.000	0.000	0.000	1.352	0.177	1.529
05:35:00	0.000	0.000	0.000	1.322	0.180	1.502
05:40:00	0.000	0.000	0.000	1.292	0.183	1.475

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
05:45:00	0.000	0.000	0.000	1.262	0.187	1.448
05:50:00	0.000	0.000	0.000	1.232	0.190	1.422
05:55:00	0.000	0.000	0.000	1.202	0.193	1.395
06:00:00	0.000	0.000	0.000	1.173	0.196	1.369
06:05:00	0.000	0.000	0.000	1.145	0.199	1.344
06:10:00	0.000	0.000	0.000	1.117	0.201	1.318
06:15:00	0.000	0.000	0.000	1.089	0.204	1.293
06:20:00	0.000	0.000	0.000	1.061	0.207	1.268
06:25:00	0.000	0.000	0.000	1.034	0.209	1.243
06:30:00	0.000	0.000	0.000	1.007	0.212	1.219
06:35:00	0.000	0.000	0.000	0.980	0.214	1.194
06:40:00	0.000	0.000	0.000	0.954	0.216	1.170
06:45:00	0.000	0.000	0.000	0.928	0.219	1.146
06:50:00	0.000	0.000	0.000	0.902	0.221	1.123
06:55:00	0.000	0.000	0.000	0.877	0.223	1.099
07:00:00	0.000	0.000	0.000	0.852	0.225	1.076
07:05:00	0.000	0.000	0.000	0.827	0.227	1.054
07:10:00	0.000	0.000	0.000	0.803	0.228	1.032
07:15:00	0.000	0.000	0.000	0.780	0.230	1.010
07:20:00	0.000	0.000	0.000	0.758	0.232	0.989
07:25:00	0.000	0.000	0.000	0.736	0.233	0.969
07:30:00	0.000	0.000	0.000	0.715	0.235	0.950
07:35:00	0.000	0.000	0.000	0.696	0.236	0.932
07:40:00	0.000	0.000	0.000	0.677	0.238	0.915
07:45:00	0.000	0.000	0.000	0.659	0.239	0.899
07:50:00	0.000	0.000	0.000	0.642	0.240	0.883
07:55:00	0.000	0.000	0.000	0.626	0.242	0.867
08:00:00	0.000	0.000	0.000	0.609	0.243	0.852
08:05:00	0.000	0.000	0.000	0.594	0.244	0.838
08:10:00	0.000	0.000	0.000	0.578	0.245	0.824
08:15:00	0.000	0.000	0.000	0.563	0.246	0.810
08:20:00	0.000	0.000	0.000	0.548	0.247	0.796
08:25:00	0.000	0.000	0.000	0.534	0.248	0.782
08:30:00	0.000	0.000	0.000	0.519	0.249	0.769
08:35:00	0.000	0.000	0.000	0.505	0.250	0.755

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
08:40:00	0.000	0.000	0.000	0.491	0.251	0.742
08:45:00	0.000	0.000	0.000	0.477	0.252	0.729
08:50:00	0.000	0.000	0.000	0.463	0.253	0.716
08:55:00	0.000	0.000	0.000	0.449	0.254	0.703
09:00:00	0.000	0.000	0.000	0.436	0.254	0.690
09:05:00	0.000	0.000	0.000	0.422	0.255	0.677
09:10:00	0.000	0.000	0.000	0.408	0.256	0.664
09:15:00	0.000	0.000	0.000	0.395	0.256	0.652
09:20:00	0.000	0.000	0.000	0.382	0.257	0.639
09:25:00	0.000	0.000	0.000	0.369	0.258	0.627
09:30:00	0.000	0.000	0.000	0.357	0.258	0.615
09:35:00	0.000	0.000	0.000	0.344	0.259	0.603
09:40:00	0.000	0.000	0.000	0.332	0.259	0.592
09:45:00	0.000	0.000	0.000	0.321	0.260	0.580
09:50:00	0.000	0.000	0.000	0.310	0.260	0.569
09:55:00	0.000	0.000	0.000	0.298	0.260	0.559
10:00:00	0.000	0.000	0.000	0.288	0.261	0.548
10:05:00	0.000	0.000	0.000	0.277	0.261	0.538
10:10:00	0.000	0.000	0.000	0.266	0.261	0.527
10:15:00	0.000	0.000	0.000	0.256	0.261	0.517
10:20:00	0.000	0.000	0.000	0.246	0.261	0.507
10:25:00	0.000	0.000	0.000	0.235	0.262	0.497
10:30:00	0.000	0.000	0.000	0.225	0.262	0.487
10:35:00	0.000	0.000	0.000	0.215	0.262	0.477
10:40:00	0.000	0.000	0.000	0.205	0.262	0.467
10:45:00	0.000	0.000	0.000	0.195	0.262	0.457
10:50:00	0.000	0.000	0.000	0.185	0.262	0.447
10:55:00	0.000	0.000	0.000	0.175	0.262	0.437
11:00:00	0.000	0.000	0.000	0.165	0.262	0.427
11:05:00	0.000	0.000	0.000	0.155	0.261	0.416
11:10:00	0.000	0.000	0.000	0.145	0.261	0.406
11:15:00	0.000	0.000	0.000	0.135	0.261	0.396
11:20:00	0.000	0.000	0.000	0.126	0.261	0.386
11:25:00	0.000	0.000	0.000	0.116	0.260	0.376
11:30:00	0.000	0.000	0.000	0.106	0.260	0.366

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
11:35:00	0.000	0.000	0.000	0.097	0.260	0.357
11:40:00	0.000	0.000	0.000	0.088	0.259	0.347
11:45:00	0.000	0.000	0.000	0.079	0.259	0.338
11:50:00	0.000	0.000	0.000	0.070	0.259	0.328
11:55:00	0.000	0.000	0.000	0.061	0.258	0.319
12:00:00	0.000	0.000	0.000	0.053	0.258	0.311
12:05:00	0.000	0.000	0.000	0.045	0.257	0.303
12:10:00	0.000	0.000	0.000	0.038	0.257	0.295
12:15:00	0.000	0.000	0.000	0.032	0.256	0.288
12:20:00	0.000	0.000	0.000	0.026	0.255	0.281
12:25:00	0.000	0.000	0.000	0.021	0.255	0.276
12:30:00	0.000	0.000	0.000	0.017	0.254	0.271
12:35:00	0.000	0.000	0.000	0.013	0.254	0.267
12:40:00	0.000	0.000	0.000	0.010	0.253	0.263
12:45:00	0.000	0.000	0.000	0.008	0.252	0.260
12:50:00	0.000	0.000	0.000	0.006	0.252	0.258
12:55:00	0.000	0.000	0.000	0.004	0.251	0.255
13:00:00	0.000	0.000	0.000	0.003	0.250	0.254
13:05:00	0.000	0.000	0.000	0.002	0.250	0.252
13:10:00	0.000	0.000	0.000	0.002	0.249	0.251
13:15:00	0.000	0.000	0.000	0.001	0.248	0.249
13:20:00	0.000	0.000	0.000	0.001	0.248	0.248
13:25:00	0.000	0.000	0.000	0.000	0.247	0.247
13:30:00	0.000	0.000	0.000	0.000	0.246	0.246
13:35:00	0.000	0.000	0.000	0.000	0.246	0.246
13:40:00	0.000	0.000	0.000	0.000	0.245	0.245
13:45:00	0.000	0.000	0.000	0.000	0.244	0.244
13:50:00	0.000	0.000	0.000	0.000	0.244	0.244
13:55:00	0.000	0.000	0.000	0.000	0.243	0.243
14:00:00	0.000	0.000	0.000	0.000	0.242	0.242
14:05:00	0.000	0.000	0.000	0.000	0.242	0.242
14:10:00	0.000	0.000	0.000	0.000	0.241	0.241
14:15:00	0.000	0.000	0.000	0.000	0.240	0.240
14:20:00	0.000	0.000	0.000	0.000	0.240	0.240
14:25:00	0.000	0.000	0.000	0.000	0.239	0.239

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
14:30:00	0.000	0.000	0.000	0.000	0.239	0.239
14:35:00	0.000	0.000	0.000	0.000	0.238	0.238
14:40:00	0.000	0.000	0.000	0.000	0.237	0.237
14:45:00	0.000	0.000	0.000	0.000	0.237	0.237
14:50:00	0.000	0.000	0.000	0.000	0.236	0.236
14:55:00	0.000	0.000	0.000	0.000	0.235	0.235
15:00:00	0.000	0.000	0.000	0.000	0.235	0.235
15:05:00	0.000	0.000	0.000	0.000	0.234	0.234
15:10:00	0.000	0.000	0.000	0.000	0.233	0.233
15:15:00	0.000	0.000	0.000	0.000	0.233	0.233
15:20:00	0.000	0.000	0.000	0.000	0.232	0.232
15:25:00	0.000	0.000	0.000	0.000	0.232	0.232
15:30:00	0.000	0.000	0.000	0.000	0.231	0.231
15:35:00	0.000	0.000	0.000	0.000	0.230	0.230
15:40:00	0.000	0.000	0.000	0.000	0.230	0.230
15:45:00	0.000	0.000	0.000	0.000	0.229	0.229
15:50:00	0.000	0.000	0.000	0.000	0.228	0.228
15:55:00	0.000	0.000	0.000	0.000	0.228	0.228
16:00:00	0.000	0.000	0.000	0.000	0.227	0.227
16:05:00	0.000	0.000	0.000	0.000	0.227	0.227
16:10:00	0.000	0.000	0.000	0.000	0.226	0.226
16:15:00	0.000	0.000	0.000	0.000	0.225	0.225
16:20:00	0.000	0.000	0.000	0.000	0.225	0.225
16:25:00	0.000	0.000	0.000	0.000	0.224	0.224
16:30:00	0.000	0.000	0.000	0.000	0.224	0.224
16:35:00	0.000	0.000	0.000	0.000	0.223	0.223
16:40:00	0.000	0.000	0.000	0.000	0.222	0.222
16:45:00	0.000	0.000	0.000	0.000	0.222	0.222
16:50:00	0.000	0.000	0.000	0.000	0.221	0.221
16:55:00	0.000	0.000	0.000	0.000	0.221	0.221
17:00:00	0.000	0.000	0.000	0.000	0.220	0.220
17:05:00	0.000	0.000	0.000	0.000	0.219	0.219
17:10:00	0.000	0.000	0.000	0.000	0.219	0.219
17:15:00	0.000	0.000	0.000	0.000	0.218	0.218
17:20:00	0.000	0.000	0.000	0.000	0.218	0.218

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
17:25:00	0.000	0.000	0.000	0.000	0.217	0.217
17:30:00	0.000	0.000	0.000	0.000	0.217	0.217
17:35:00	0.000	0.000	0.000	0.000	0.216	0.216
17:40:00	0.000	0.000	0.000	0.000	0.215	0.215
17:45:00	0.000	0.000	0.000	0.000	0.215	0.215
17:50:00	0.000	0.000	0.000	0.000	0.214	0.214
17:55:00	0.000	0.000	0.000	0.000	0.214	0.214
18:00:00	0.000	0.000	0.000	0.000	0.213	0.213
18:05:00	0.000	0.000	0.000	0.000	0.212	0.212
18:10:00	0.000	0.000	0.000	0.000	0.212	0.212
18:15:00	0.000	0.000	0.000	0.000	0.211	0.211
18:20:00	0.000	0.000	0.000	0.000	0.211	0.211
18:25:00	0.000	0.000	0.000	0.000	0.210	0.210
18:30:00	0.000	0.000	0.000	0.000	0.210	0.210
18:35:00	0.000	0.000	0.000	0.000	0.209	0.209
18:40:00	0.000	0.000	0.000	0.000	0.209	0.209
18:45:00	0.000	0.000	0.000	0.000	0.208	0.208
18:50:00	0.000	0.000	0.000	0.000	0.207	0.207
18:55:00	0.000	0.000	0.000	0.000	0.207	0.207
19:00:00	0.000	0.000	0.000	0.000	0.206	0.206
19:05:00	0.000	0.000	0.000	0.000	0.206	0.206
19:10:00	0.000	0.000	0.000	0.000	0.205	0.205
19:15:00	0.000	0.000	0.000	0.000	0.205	0.205
19:20:00	0.000	0.000	0.000	0.000	0.204	0.204
19:25:00	0.000	0.000	0.000	0.000	0.204	0.204
19:30:00	0.000	0.000	0.000	0.000	0.203	0.203
19:35:00	0.000	0.000	0.000	0.000	0.202	0.202
19:40:00	0.000	0.000	0.000	0.000	0.202	0.202
19:45:00	0.000	0.000	0.000	0.000	0.201	0.201
19:50:00	0.000	0.000	0.000	0.000	0.201	0.201
19:55:00	0.000	0.000	0.000	0.000	0.200	0.200
20:00:00	0.000	0.000	0.000	0.000	0.200	0.200
20:05:00	0.000	0.000	0.000	0.000	0.199	0.199
20:10:00	0.000	0.000	0.000	0.000	0.199	0.199
20:15:00	0.000	0.000	0.000	0.000	0.198	0.198

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
20:20:00	0.000	0.000	0.000	0.000	0.198	0.198
20:25:00	0.000	0.000	0.000	0.000	0.197	0.197
20:30:00	0.000	0.000	0.000	0.000	0.197	0.197
20:35:00	0.000	0.000	0.000	0.000	0.196	0.196
20:40:00	0.000	0.000	0.000	0.000	0.195	0.195
20:45:00	0.000	0.000	0.000	0.000	0.195	0.195
20:50:00	0.000	0.000	0.000	0.000	0.194	0.194
20:55:00	0.000	0.000	0.000	0.000	0.194	0.194
21:00:00	0.000	0.000	0.000	0.000	0.193	0.193
21:05:00	0.000	0.000	0.000	0.000	0.193	0.193
21:10:00	0.000	0.000	0.000	0.000	0.192	0.192
21:15:00	0.000	0.000	0.000	0.000	0.192	0.192
21:20:00	0.000	0.000	0.000	0.000	0.191	0.191
21:25:00	0.000	0.000	0.000	0.000	0.191	0.191
21:30:00	0.000	0.000	0.000	0.000	0.190	0.190
21:35:00	0.000	0.000	0.000	0.000	0.190	0.190
21:40:00	0.000	0.000	0.000	0.000	0.189	0.189
21:45:00	0.000	0.000	0.000	0.000	0.189	0.189
21:50:00	0.000	0.000	0.000	0.000	0.188	0.188
21:55:00	0.000	0.000	0.000	0.000	0.188	0.188
22:00:00	0.000	0.000	0.000	0.000	0.187	0.187
22:05:00	0.000	0.000	0.000	0.000	0.187	0.187
22:10:00	0.000	0.000	0.000	0.000	0.186	0.186
22:15:00	0.000	0.000	0.000	0.000	0.186	0.186
22:20:00	0.000	0.000	0.000	0.000	0.185	0.185
22:25:00	0.000	0.000	0.000	0.000	0.185	0.185
22:30:00	0.000	0.000	0.000	0.000	0.184	0.184
22:35:00	0.000	0.000	0.000	0.000	0.184	0.184
22:40:00	0.000	0.000	0.000	0.000	0.183	0.183
22:45:00	0.000	0.000	0.000	0.000	0.183	0.183
22:50:00	0.000	0.000	0.000	0.000	0.182	0.182
22:55:00	0.000	0.000	0.000	0.000	0.182	0.182
23:00:00	0.000	0.000	0.000	0.000	0.181	0.181
23:05:00	0.000	0.000	0.000	0.000	0.181	0.181
23:10:00	0.000	0.000	0.000	0.000	0.180	0.180

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
23:15:00	0.000	0.000	0.000	0.000	0.180	0.180
23:20:00	0.000	0.000	0.000	0.000	0.179	0.179
23:25:00	0.000	0.000	0.000	0.000	0.179	0.179
23:30:00	0.000	0.000	0.000	0.000	0.178	0.178
23:35:00	0.000	0.000	0.000	0.000	0.178	0.178
23:40:00	0.000	0.000	0.000	0.000	0.177	0.177
23:45:00	0.000	0.000	0.000	0.000	0.177	0.177
23:50:00	0.000	0.000	0.000	0.000	0.176	0.176
23:55:00	0.000	0.000	0.000	0.000	0.176	0.176
24:00:00	0.000	0.000	0.000	0.000	0.176	0.176
24:05:00	0.000	0.000	0.000	0.000	0.175	0.175
24:10:00	0.000	0.000	0.000	0.000	0.175	0.175
24:15:00	0.000	0.000	0.000	0.000	0.174	0.174
24:20:00	0.000	0.000	0.000	0.000	0.174	0.174
24:25:00	0.000	0.000	0.000	0.000	0.173	0.173
24:30:00	0.000	0.000	0.000	0.000	0.173	0.173
24:35:00	0.000	0.000	0.000	0.000	0.172	0.172
24:40:00	0.000	0.000	0.000	0.000	0.172	0.172
24:45:00	0.000	0.000	0.000	0.000	0.171	0.171
24:50:00	0.000	0.000	0.000	0.000	0.171	0.171
24:55:00	0.000	0.000	0.000	0.000	0.170	0.170
25:00:00	0.000	0.000	0.000	0.000	0.170	0.170
25:05:00	0.000	0.000	0.000	0.000	0.170	0.170
25:10:00	0.000	0.000	0.000	0.000	0.169	0.169
25:15:00	0.000	0.000	0.000	0.000	0.169	0.169
25:20:00	0.000	0.000	0.000	0.000	0.168	0.168
25:25:00	0.000	0.000	0.000	0.000	0.168	0.168
25:30:00	0.000	0.000	0.000	0.000	0.167	0.167
25:35:00	0.000	0.000	0.000	0.000	0.167	0.167
25:40:00	0.000	0.000	0.000	0.000	0.166	0.166
25:45:00	0.000	0.000	0.000	0.000	0.166	0.166
25:50:00	0.000	0.000	0.000	0.000	0.165	0.165
25:55:00	0.000	0.000	0.000	0.000	0.165	0.165
26:00:00	0.000	0.000	0.000	0.000	0.165	0.165
26:05:00	0.000	0.000	0.000	0.000	0.164	0.164

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
26:10:00	0.000	0.000	0.000	0.000	0.164	0.164
26:15:00	0.000	0.000	0.000	0.000	0.163	0.163
26:20:00	0.000	0.000	0.000	0.000	0.163	0.163
26:25:00	0.000	0.000	0.000	0.000	0.162	0.162
26:30:00	0.000	0.000	0.000	0.000	0.162	0.162
26:35:00	0.000	0.000	0.000	0.000	0.162	0.162
26:40:00	0.000	0.000	0.000	0.000	0.161	0.161
26:45:00	0.000	0.000	0.000	0.000	0.161	0.161
26:50:00	0.000	0.000	0.000	0.000	0.160	0.160
26:55:00	0.000	0.000	0.000	0.000	0.160	0.160
27:00:00	0.000	0.000	0.000	0.000	0.159	0.159
27:05:00	0.000	0.000	0.000	0.000	0.159	0.159
27:10:00	0.000	0.000	0.000	0.000	0.159	0.159
27:15:00	0.000	0.000	0.000	0.000	0.158	0.158
27:20:00	0.000	0.000	0.000	0.000	0.158	0.158
27:25:00	0.000	0.000	0.000	0.000	0.157	0.157
27:30:00	0.000	0.000	0.000	0.000	0.157	0.157
27:35:00	0.000	0.000	0.000	0.000	0.156	0.156
27:40:00	0.000	0.000	0.000	0.000	0.156	0.156
27:45:00	0.000	0.000	0.000	0.000	0.156	0.156
27:50:00	0.000	0.000	0.000	0.000	0.155	0.155
27:55:00	0.000	0.000	0.000	0.000	0.155	0.155
28:00:00	0.000	0.000	0.000	0.000	0.154	0.154
28:05:00	0.000	0.000	0.000	0.000	0.154	0.154
28:10:00	0.000	0.000	0.000	0.000	0.153	0.153
28:15:00	0.000	0.000	0.000	0.000	0.153	0.153
28:20:00	0.000	0.000	0.000	0.000	0.153	0.153
28:25:00	0.000	0.000	0.000	0.000	0.152	0.152
28:30:00	0.000	0.000	0.000	0.000	0.152	0.152
28:35:00	0.000	0.000	0.000	0.000	0.151	0.151
28:40:00	0.000	0.000	0.000	0.000	0.151	0.151
28:45:00	0.000	0.000	0.000	0.000	0.151	0.151
28:50:00	0.000	0.000	0.000	0.000	0.150	0.150
28:55:00	0.000	0.000	0.000	0.000	0.150	0.150
29:00:00	0.000	0.000	0.000	0.000	0.149	0.149

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
29:05:00	0.000	0.000	0.000	0.000	0.149	0.149
29:10:00	0.000	0.000	0.000	0.000	0.149	0.149
29:15:00	0.000	0.000	0.000	0.000	0.148	0.148
29:20:00	0.000	0.000	0.000	0.000	0.148	0.148
29:25:00	0.000	0.000	0.000	0.000	0.147	0.147
29:30:00	0.000	0.000	0.000	0.000	0.147	0.147
29:35:00	0.000	0.000	0.000	0.000	0.147	0.147
29:40:00	0.000	0.000	0.000	0.000	0.146	0.146
29:45:00	0.000	0.000	0.000	0.000	0.146	0.146
29:50:00	0.000	0.000	0.000	0.000	0.145	0.145
29:55:00	0.000	0.000	0.000	0.000	0.145	0.145
30:00:00	0.000	0.000	0.000	0.000	0.145	0.145
30:05:00	0.000	0.000	0.000	0.000	0.144	0.144
30:10:00	0.000	0.000	0.000	0.000	0.144	0.144
30:15:00	0.000	0.000	0.000	0.000	0.143	0.143
30:20:00	0.000	0.000	0.000	0.000	0.143	0.143
30:25:00	0.000	0.000	0.000	0.000	0.143	0.143
30:30:00	0.000	0.000	0.000	0.000	0.142	0.142
30:35:00	0.000	0.000	0.000	0.000	0.142	0.142
30:40:00	0.000	0.000	0.000	0.000	0.142	0.142
30:45:00	0.000	0.000	0.000	0.000	0.141	0.141
30:50:00	0.000	0.000	0.000	0.000	0.141	0.141
30:55:00	0.000	0.000	0.000	0.000	0.140	0.140
31:00:00	0.000	0.000	0.000	0.000	0.140	0.140
31:05:00	0.000	0.000	0.000	0.000	0.140	0.140
31:10:00	0.000	0.000	0.000	0.000	0.139	0.139
31:15:00	0.000	0.000	0.000	0.000	0.139	0.139
31:20:00	0.000	0.000	0.000	0.000	0.139	0.139
31:25:00	0.000	0.000	0.000	0.000	0.138	0.138
31:30:00	0.000	0.000	0.000	0.000	0.138	0.138
31:35:00	0.000	0.000	0.000	0.000	0.137	0.137
31:40:00	0.000	0.000	0.000	0.000	0.137	0.137
31:45:00	0.000	0.000	0.000	0.000	0.137	0.137
31:50:00	0.000	0.000	0.000	0.000	0.136	0.136
31:55:00	0.000	0.000	0.000	0.000	0.136	0.136

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
32:00:00	0.000	0.000	0.000	0.000	0.136	0.136
32:05:00	0.000	0.000	0.000	0.000	0.135	0.135
32:10:00	0.000	0.000	0.000	0.000	0.135	0.135
32:15:00	0.000	0.000	0.000	0.000	0.135	0.135
32:20:00	0.000	0.000	0.000	0.000	0.134	0.134
32:25:00	0.000	0.000	0.000	0.000	0.134	0.134
32:30:00	0.000	0.000	0.000	0.000	0.133	0.133
32:35:00	0.000	0.000	0.000	0.000	0.133	0.133
32:40:00	0.000	0.000	0.000	0.000	0.133	0.133
32:45:00	0.000	0.000	0.000	0.000	0.132	0.132
32:50:00	0.000	0.000	0.000	0.000	0.132	0.132
32:55:00	0.000	0.000	0.000	0.000	0.132	0.132
33:00:00	0.000	0.000	0.000	0.000	0.131	0.131
33:05:00	0.000	0.000	0.000	0.000	0.131	0.131
33:10:00	0.000	0.000	0.000	0.000	0.131	0.131
33:15:00	0.000	0.000	0.000	0.000	0.130	0.130
33:20:00	0.000	0.000	0.000	0.000	0.130	0.130
33:25:00	0.000	0.000	0.000	0.000	0.130	0.130
33:30:00	0.000	0.000	0.000	0.000	0.129	0.129
33:35:00	0.000	0.000	0.000	0.000	0.129	0.129
33:40:00	0.000	0.000	0.000	0.000	0.129	0.129
33:45:00	0.000	0.000	0.000	0.000	0.128	0.128
33:50:00	0.000	0.000	0.000	0.000	0.128	0.128
33:55:00	0.000	0.000	0.000	0.000	0.127	0.127
34:00:00	0.000	0.000	0.000	0.000	0.127	0.127
34:05:00	0.000	0.000	0.000	0.000	0.127	0.127
34:10:00	0.000	0.000	0.000	0.000	0.126	0.126
34:15:00	0.000	0.000	0.000	0.000	0.126	0.126
34:20:00	0.000	0.000	0.000	0.000	0.126	0.126
34:25:00	0.000	0.000	0.000	0.000	0.125	0.125
34:30:00	0.000	0.000	0.000	0.000	0.125	0.125
34:35:00	0.000	0.000	0.000	0.000	0.125	0.125
34:40:00	0.000	0.000	0.000	0.000	0.124	0.124
34:45:00	0.000	0.000	0.000	0.000	0.124	0.124
34:50:00	0.000	0.000	0.000	0.000	0.124	0.124

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
34:55:00	0.000	0.000	0.000	0.000	0.123	0.123
35:00:00	0.000	0.000	0.000	0.000	0.123	0.123
35:05:00	0.000	0.000	0.000	0.000	0.123	0.123
35:10:00	0.000	0.000	0.000	0.000	0.122	0.122
35:15:00	0.000	0.000	0.000	0.000	0.122	0.122
35:20:00	0.000	0.000	0.000	0.000	0.122	0.122
35:25:00	0.000	0.000	0.000	0.000	0.121	0.121
35:30:00	0.000	0.000	0.000	0.000	0.121	0.121
35:35:00	0.000	0.000	0.000	0.000	0.121	0.121
35:40:00	0.000	0.000	0.000	0.000	0.120	0.120
35:45:00	0.000	0.000	0.000	0.000	0.120	0.120
35:50:00	0.000	0.000	0.000	0.000	0.120	0.120
35:55:00	0.000	0.000	0.000	0.000	0.120	0.120
36:00:00	0.000	0.000	0.000	0.000	0.119	0.119
36:05:00	0.000	0.000	0.000	0.000	0.119	0.119
36:10:00	0.000	0.000	0.000	0.000	0.119	0.119
36:15:00	0.000	0.000	0.000	0.000	0.118	0.118
36:20:00	0.000	0.000	0.000	0.000	0.118	0.118
36:25:00	0.000	0.000	0.000	0.000	0.118	0.118
36:30:00	0.000	0.000	0.000	0.000	0.117	0.117
36:35:00	0.000	0.000	0.000	0.000	0.117	0.117
36:40:00	0.000	0.000	0.000	0.000	0.117	0.117
36:45:00	0.000	0.000	0.000	0.000	0.116	0.116
36:50:00	0.000	0.000	0.000	0.000	0.116	0.116
36:55:00	0.000	0.000	0.000	0.000	0.116	0.116
37:00:00	0.000	0.000	0.000	0.000	0.115	0.115
37:05:00	0.000	0.000	0.000	0.000	0.115	0.115
37:10:00	0.000	0.000	0.000	0.000	0.115	0.115
37:15:00	0.000	0.000	0.000	0.000	0.114	0.114
37:20:00	0.000	0.000	0.000	0.000	0.114	0.114
37:25:00	0.000	0.000	0.000	0.000	0.114	0.114
37:30:00	0.000	0.000	0.000	0.000	0.114	0.114
37:35:00	0.000	0.000	0.000	0.000	0.113	0.113
37:40:00	0.000	0.000	0.000	0.000	0.113	0.113
37:45:00	0.000	0.000	0.000	0.000	0.113	0.113

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
37:50:00	0.000	0.000	0.000	0.000	0.112	0.112
37:55:00	0.000	0.000	0.000	0.000	0.112	0.112
38:00:00	0.000	0.000	0.000	0.000	0.112	0.112
38:05:00	0.000	0.000	0.000	0.000	0.111	0.111
38:10:00	0.000	0.000	0.000	0.000	0.111	0.111
38:15:00	0.000	0.000	0.000	0.000	0.111	0.111
38:20:00	0.000	0.000	0.000	0.000	0.111	0.111
38:25:00	0.000	0.000	0.000	0.000	0.110	0.110
38:30:00	0.000	0.000	0.000	0.000	0.110	0.110
38:35:00	0.000	0.000	0.000	0.000	0.110	0.110
38:40:00	0.000	0.000	0.000	0.000	0.109	0.109
38:45:00	0.000	0.000	0.000	0.000	0.109	0.109
38:50:00	0.000	0.000	0.000	0.000	0.109	0.109
38:55:00	0.000	0.000	0.000	0.000	0.108	0.108
39:00:00	0.000	0.000	0.000	0.000	0.108	0.108
39:05:00	0.000	0.000	0.000	0.000	0.108	0.108
39:10:00	0.000	0.000	0.000	0.000	0.108	0.108
39:15:00	0.000	0.000	0.000	0.000	0.107	0.107
39:20:00	0.000	0.000	0.000	0.000	0.107	0.107
39:25:00	0.000	0.000	0.000	0.000	0.107	0.107
39:30:00	0.000	0.000	0.000	0.000	0.106	0.106
39:35:00	0.000	0.000	0.000	0.000	0.106	0.106
39:40:00	0.000	0.000	0.000	0.000	0.106	0.106
39:45:00	0.000	0.000	0.000	0.000	0.106	0.106
39:50:00	0.000	0.000	0.000	0.000	0.105	0.105
39:55:00	0.000	0.000	0.000	0.000	0.105	0.105
40:00:00	0.000	0.000	0.000	0.000	0.105	0.105
40:05:00	0.000	0.000	0.000	0.000	0.104	0.104
40:10:00	0.000	0.000	0.000	0.000	0.104	0.104
40:15:00	0.000	0.000	0.000	0.000	0.104	0.104
40:20:00	0.000	0.000	0.000	0.000	0.104	0.104
40:25:00	0.000	0.000	0.000	0.000	0.103	0.103
40:30:00	0.000	0.000	0.000	0.000	0.103	0.103
40:35:00	0.000	0.000	0.000	0.000	0.103	0.103
40:40:00	0.000	0.000	0.000	0.000	0.103	0.103

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
40:45:00	0.000	0.000	0.000	0.000	0.102	0.102
40:50:00	0.000	0.000	0.000	0.000	0.102	0.102
40:55:00	0.000	0.000	0.000	0.000	0.102	0.102
41:00:00	0.000	0.000	0.000	0.000	0.101	0.101
41:05:00	0.000	0.000	0.000	0.000	0.101	0.101
41:10:00	0.000	0.000	0.000	0.000	0.101	0.101
41:15:00	0.000	0.000	0.000	0.000	0.101	0.101
41:20:00	0.000	0.000	0.000	0.000	0.100	0.100
41:25:00	0.000	0.000	0.000	0.000	0.100	0.100
41:30:00	0.000	0.000	0.000	0.000	0.100	0.100
41:35:00	0.000	0.000	0.000	0.000	0.100	0.100
41:40:00	0.000	0.000	0.000	0.000	0.099	0.099
41:45:00	0.000	0.000	0.000	0.000	0.099	0.099
41:50:00	0.000	0.000	0.000	0.000	0.099	0.099
41:55:00	0.000	0.000	0.000	0.000	0.098	0.098
42:00:00	0.000	0.000	0.000	0.000	0.098	0.098
42:05:00	0.000	0.000	0.000	0.000	0.098	0.098
42:10:00	0.000	0.000	0.000	0.000	0.098	0.098
42:15:00	0.000	0.000	0.000	0.000	0.097	0.097
42:20:00	0.000	0.000	0.000	0.000	0.097	0.097
42:25:00	0.000	0.000	0.000	0.000	0.097	0.097
42:30:00	0.000	0.000	0.000	0.000	0.097	0.097
42:35:00	0.000	0.000	0.000	0.000	0.096	0.096
42:40:00	0.000	0.000	0.000	0.000	0.096	0.096
42:45:00	0.000	0.000	0.000	0.000	0.096	0.096
42:50:00	0.000	0.000	0.000	0.000	0.096	0.096
42:55:00	0.000	0.000	0.000	0.000	0.095	0.095
43:00:00	0.000	0.000	0.000	0.000	0.095	0.095
43:05:00	0.000	0.000	0.000	0.000	0.095	0.095
43:10:00	0.000	0.000	0.000	0.000	0.095	0.095
43:15:00	0.000	0.000	0.000	0.000	0.094	0.094
43:20:00	0.000	0.000	0.000	0.000	0.094	0.094
43:25:00	0.000	0.000	0.000	0.000	0.094	0.094
43:30:00	0.000	0.000	0.000	0.000	0.094	0.094
43:35:00	0.000	0.000	0.000	0.000	0.093	0.093

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
43:40:00	0.000	0.000	0.000	0.000	0.093	0.093
43:45:00	0.000	0.000	0.000	0.000	0.093	0.093
43:50:00	0.000	0.000	0.000	0.000	0.093	0.093
43:55:00	0.000	0.000	0.000	0.000	0.092	0.092
44:00:00	0.000	0.000	0.000	0.000	0.092	0.092
44:05:00	0.000	0.000	0.000	0.000	0.092	0.092
44:10:00	0.000	0.000	0.000	0.000	0.092	0.092
44:15:00	0.000	0.000	0.000	0.000	0.091	0.091
44:20:00	0.000	0.000	0.000	0.000	0.091	0.091
44:25:00	0.000	0.000	0.000	0.000	0.091	0.091
44:30:00	0.000	0.000	0.000	0.000	0.091	0.091
44:35:00	0.000	0.000	0.000	0.000	0.090	0.090
44:40:00	0.000	0.000	0.000	0.000	0.090	0.090
44:45:00	0.000	0.000	0.000	0.000	0.090	0.090
44:50:00	0.000	0.000	0.000	0.000	0.090	0.090
44:55:00	0.000	0.000	0.000	0.000	0.089	0.089
45:00:00	0.000	0.000	0.000	0.000	0.089	0.089
45:05:00	0.000	0.000	0.000	0.000	0.089	0.089
45:10:00	0.000	0.000	0.000	0.000	0.089	0.089
45:15:00	0.000	0.000	0.000	0.000	0.088	0.088
45:20:00	0.000	0.000	0.000	0.000	0.088	0.088
45:25:00	0.000	0.000	0.000	0.000	0.088	0.088
45:30:00	0.000	0.000	0.000	0.000	0.088	0.088
45:35:00	0.000	0.000	0.000	0.000	0.087	0.087
45:40:00	0.000	0.000	0.000	0.000	0.087	0.087
45:45:00	0.000	0.000	0.000	0.000	0.087	0.087
45:50:00	0.000	0.000	0.000	0.000	0.087	0.087
45:55:00	0.000	0.000	0.000	0.000	0.087	0.087
46:00:00	0.000	0.000	0.000	0.000	0.086	0.086
46:05:00	0.000	0.000	0.000	0.000	0.086	0.086
46:10:00	0.000	0.000	0.000	0.000	0.086	0.086
46:15:00	0.000	0.000	0.000	0.000	0.086	0.086
46:20:00	0.000	0.000	0.000	0.000	0.085	0.085
46:25:00	0.000	0.000	0.000	0.000	0.085	0.085
46:30:00	0.000	0.000	0.000	0.000	0.085	0.085

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
46:35:00	0.000	0.000	0.000	0.000	0.085	0.085
46:40:00	0.000	0.000	0.000	0.000	0.084	0.084
46:45:00	0.000	0.000	0.000	0.000	0.084	0.084
46:50:00	0.000	0.000	0.000	0.000	0.084	0.084
46:55:00	0.000	0.000	0.000	0.000	0.084	0.084
47:00:00	0.000	0.000	0.000	0.000	0.084	0.084
47:05:00	0.000	0.000	0.000	0.000	0.083	0.083
47:10:00	0.000	0.000	0.000	0.000	0.083	0.083
47:15:00	0.000	0.000	0.000	0.000	0.083	0.083
47:20:00	0.000	0.000	0.000	0.000	0.083	0.083
47:25:00	0.000	0.000	0.000	0.000	0.082	0.082
47:30:00	0.000	0.000	0.000	0.000	0.082	0.082
47:35:00	0.000	0.000	0.000	0.000	0.082	0.082
47:40:00	0.000	0.000	0.000	0.000	0.082	0.082
47:45:00	0.000	0.000	0.000	0.000	0.082	0.082
47:50:00	0.000	0.000	0.000	0.000	0.081	0.081
47:55:00	0.000	0.000	0.000	0.000	0.081	0.081
48:00:00	0.000	0.000	0.000	0.000	0.081	0.081
48:05:00	0.000	0.000	0.000	0.000	0.081	0.081
48:10:00	0.000	0.000	0.000	0.000	0.080	0.080
48:15:00	0.000	0.000	0.000	0.000	0.080	0.080
48:20:00	0.000	0.000	0.000	0.000	0.080	0.080
48:25:00	0.000	0.000	0.000	0.000	0.080	0.080
48:30:00	0.000	0.000	0.000	0.000	0.080	0.080
48:35:00	0.000	0.000	0.000	0.000	0.079	0.079
48:40:00	0.000	0.000	0.000	0.000	0.079	0.079
48:45:00	0.000	0.000	0.000	0.000	0.079	0.079
48:50:00	0.000	0.000	0.000	0.000	0.079	0.079
48:55:00	0.000	0.000	0.000	0.000	0.079	0.079
49:00:00	0.000	0.000	0.000	0.000	0.078	0.078
49:05:00	0.000	0.000	0.000	0.000	0.078	0.078
49:10:00	0.000	0.000	0.000	0.000	0.078	0.078
49:15:00	0.000	0.000	0.000	0.000	0.078	0.078
49:20:00	0.000	0.000	0.000	0.000	0.078	0.078
49:25:00	0.000	0.000	0.000	0.000	0.077	0.077

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
49:30:00	0.000	0.000	0.000	0.000	0.077	0.077
49:35:00	0.000	0.000	0.000	0.000	0.077	0.077
49:40:00	0.000	0.000	0.000	0.000	0.077	0.077
49:45:00	0.000	0.000	0.000	0.000	0.076	0.076
49:50:00	0.000	0.000	0.000	0.000	0.076	0.076
49:55:00	0.000	0.000	0.000	0.000	0.076	0.076
50:00:00	0.000	0.000	0.000	0.000	0.076	0.076
50:05:00	0.000	0.000	0.000	0.000	0.076	0.076
50:10:00	0.000	0.000	0.000	0.000	0.075	0.075
50:15:00	0.000	0.000	0.000	0.000	0.075	0.075
50:20:00	0.000	0.000	0.000	0.000	0.075	0.075
50:25:00	0.000	0.000	0.000	0.000	0.075	0.075
50:30:00	0.000	0.000	0.000	0.000	0.075	0.075
50:35:00	0.000	0.000	0.000	0.000	0.074	0.074
50:40:00	0.000	0.000	0.000	0.000	0.074	0.074
50:45:00	0.000	0.000	0.000	0.000	0.074	0.074
50:50:00	0.000	0.000	0.000	0.000	0.074	0.074
50:55:00	0.000	0.000	0.000	0.000	0.074	0.074
51:00:00	0.000	0.000	0.000	0.000	0.073	0.073
51:05:00	0.000	0.000	0.000	0.000	0.073	0.073
51:10:00	0.000	0.000	0.000	0.000	0.073	0.073
51:15:00	0.000	0.000	0.000	0.000	0.073	0.073
51:20:00	0.000	0.000	0.000	0.000	0.073	0.073
51:25:00	0.000	0.000	0.000	0.000	0.072	0.072
51:30:00	0.000	0.000	0.000	0.000	0.072	0.072
51:35:00	0.000	0.000	0.000	0.000	0.072	0.072
51:40:00	0.000	0.000	0.000	0.000	0.072	0.072
51:45:00	0.000	0.000	0.000	0.000	0.072	0.072
51:50:00	0.000	0.000	0.000	0.000	0.072	0.072
51:55:00	0.000	0.000	0.000	0.000	0.071	0.071
52:00:00	0.000	0.000	0.000	0.000	0.071	0.071
52:05:00	0.000	0.000	0.000	0.000	0.071	0.071
52:10:00	0.000	0.000	0.000	0.000	0.071	0.071
52:15:00	0.000	0.000	0.000	0.000	0.071	0.071
52:20:00	0.000	0.000	0.000	0.000	0.070	0.070

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
52:25:00	0.000	0.000	0.000	0.000	0.070	0.070
52:30:00	0.000	0.000	0.000	0.000	0.070	0.070
52:35:00	0.000	0.000	0.000	0.000	0.070	0.070
52:40:00	0.000	0.000	0.000	0.000	0.070	0.070
52:45:00	0.000	0.000	0.000	0.000	0.069	0.069
52:50:00	0.000	0.000	0.000	0.000	0.069	0.069
52:55:00	0.000	0.000	0.000	0.000	0.069	0.069
53:00:00	0.000	0.000	0.000	0.000	0.069	0.069
53:05:00	0.000	0.000	0.000	0.000	0.069	0.069
53:10:00	0.000	0.000	0.000	0.000	0.069	0.069
53:15:00	0.000	0.000	0.000	0.000	0.068	0.068
53:20:00	0.000	0.000	0.000	0.000	0.068	0.068
53:25:00	0.000	0.000	0.000	0.000	0.068	0.068
53:30:00	0.000	0.000	0.000	0.000	0.068	0.068
53:35:00	0.000	0.000	0.000	0.000	0.068	0.068
53:40:00	0.000	0.000	0.000	0.000	0.067	0.067
53:45:00	0.000	0.000	0.000	0.000	0.067	0.067
53:50:00	0.000	0.000	0.000	0.000	0.067	0.067
53:55:00	0.000	0.000	0.000	0.000	0.067	0.067
54:00:00	0.000	0.000	0.000	0.000	0.067	0.067
54:05:00	0.000	0.000	0.000	0.000	0.067	0.067
54:10:00	0.000	0.000	0.000	0.000	0.066	0.066
54:15:00	0.000	0.000	0.000	0.000	0.066	0.066
54:20:00	0.000	0.000	0.000	0.000	0.066	0.066
54:25:00	0.000	0.000	0.000	0.000	0.066	0.066
54:30:00	0.000	0.000	0.000	0.000	0.066	0.066
54:35:00	0.000	0.000	0.000	0.000	0.065	0.065
54:40:00	0.000	0.000	0.000	0.000	0.065	0.065
54:45:00	0.000	0.000	0.000	0.000	0.065	0.065
54:50:00	0.000	0.000	0.000	0.000	0.065	0.065
54:55:00	0.000	0.000	0.000	0.000	0.065	0.065
55:00:00	0.000	0.000	0.000	0.000	0.065	0.065
55:05:00	0.000	0.000	0.000	0.000	0.064	0.064
55:10:00	0.000	0.000	0.000	0.000	0.064	0.064
55:15:00	0.000	0.000	0.000	0.000	0.064	0.064

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
55:20:00	0.000	0.000	0.000	0.000	0.064	0.064
55:25:00	0.000	0.000	0.000	0.000	0.064	0.064
55:30:00	0.000	0.000	0.000	0.000	0.064	0.064
55:35:00	0.000	0.000	0.000	0.000	0.063	0.063
55:40:00	0.000	0.000	0.000	0.000	0.063	0.063
55:45:00	0.000	0.000	0.000	0.000	0.063	0.063
55:50:00	0.000	0.000	0.000	0.000	0.063	0.063
55:55:00	0.000	0.000	0.000	0.000	0.063	0.063
56:00:00	0.000	0.000	0.000	0.000	0.063	0.063
56:05:00	0.000	0.000	0.000	0.000	0.062	0.062
56:10:00	0.000	0.000	0.000	0.000	0.062	0.062
56:15:00	0.000	0.000	0.000	0.000	0.062	0.062
56:20:00	0.000	0.000	0.000	0.000	0.062	0.062
56:25:00	0.000	0.000	0.000	0.000	0.062	0.062
56:30:00	0.000	0.000	0.000	0.000	0.062	0.062
56:35:00	0.000	0.000	0.000	0.000	0.061	0.061
56:40:00	0.000	0.000	0.000	0.000	0.061	0.061
56:45:00	0.000	0.000	0.000	0.000	0.061	0.061
56:50:00	0.000	0.000	0.000	0.000	0.061	0.061
56:55:00	0.000	0.000	0.000	0.000	0.061	0.061
57:00:00	0.000	0.000	0.000	0.000	0.061	0.061
57:05:00	0.000	0.000	0.000	0.000	0.060	0.060
57:10:00	0.000	0.000	0.000	0.000	0.060	0.060
57:15:00	0.000	0.000	0.000	0.000	0.060	0.060
57:20:00	0.000	0.000	0.000	0.000	0.060	0.060
57:25:00	0.000	0.000	0.000	0.000	0.060	0.060
57:30:00	0.000	0.000	0.000	0.000	0.060	0.060
57:35:00	0.000	0.000	0.000	0.000	0.059	0.059
57:40:00	0.000	0.000	0.000	0.000	0.059	0.059
57:45:00	0.000	0.000	0.000	0.000	0.059	0.059
57:50:00	0.000	0.000	0.000	0.000	0.059	0.059
57:55:00	0.000	0.000	0.000	0.000	0.059	0.059
58:00:00	0.000	0.000	0.000	0.000	0.059	0.059
58:05:00	0.000	0.000	0.000	0.000	0.058	0.058
58:10:00	0.000	0.000	0.000	0.000	0.058	0.058

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
58:15:00	0.000	0.000	0.000	0.000	0.058	0.058
58:20:00	0.000	0.000	0.000	0.000	0.058	0.058
58:25:00	0.000	0.000	0.000	0.000	0.058	0.058
58:30:00	0.000	0.000	0.000	0.000	0.058	0.058
58:35:00	0.000	0.000	0.000	0.000	0.058	0.058
58:40:00	0.000	0.000	0.000	0.000	0.057	0.057
58:45:00	0.000	0.000	0.000	0.000	0.057	0.057
58:50:00	0.000	0.000	0.000	0.000	0.057	0.057
58:55:00	0.000	0.000	0.000	0.000	0.057	0.057
59:00:00	0.000	0.000	0.000	0.000	0.057	0.057
59:05:00	0.000	0.000	0.000	0.000	0.057	0.057
59:10:00	0.000	0.000	0.000	0.000	0.056	0.056
59:15:00	0.000	0.000	0.000	0.000	0.056	0.056
59:20:00	0.000	0.000	0.000	0.000	0.056	0.056
59:25:00	0.000	0.000	0.000	0.000	0.056	0.056
59:30:00	0.000	0.000	0.000	0.000	0.056	0.056
59:35:00	0.000	0.000	0.000	0.000	0.056	0.056
59:40:00	0.000	0.000	0.000	0.000	0.056	0.056
59:45:00	0.000	0.000	0.000	0.000	0.055	0.055
59:50:00	0.000	0.000	0.000	0.000	0.055	0.055
59:55:00	0.000	0.000	0.000	0.000	0.055	0.055
60:00:00	0.000	0.000	0.000	0.000	0.055	0.055
60:05:00	0.000	0.000	0.000	0.000	0.055	0.055
60:10:00	0.000	0.000	0.000	0.000	0.055	0.055
60:15:00	0.000	0.000	0.000	0.000	0.055	0.055
60:20:00	0.000	0.000	0.000	0.000	0.054	0.054
60:25:00	0.000	0.000	0.000	0.000	0.054	0.054
60:30:00	0.000	0.000	0.000	0.000	0.054	0.054
60:35:00	0.000	0.000	0.000	0.000	0.054	0.054
60:40:00	0.000	0.000	0.000	0.000	0.054	0.054
60:45:00	0.000	0.000	0.000	0.000	0.054	0.054
60:50:00	0.000	0.000	0.000	0.000	0.053	0.053
60:55:00	0.000	0.000	0.000	0.000	0.053	0.053
61:00:00	0.000	0.000	0.000	0.000	0.053	0.053
61:05:00	0.000	0.000	0.000	0.000	0.053	0.053

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
61:10:00	0.000	0.000	0.000	0.000	0.053	0.053
61:15:00	0.000	0.000	0.000	0.000	0.053	0.053
61:20:00	0.000	0.000	0.000	0.000	0.053	0.053
61:25:00	0.000	0.000	0.000	0.000	0.052	0.052
61:30:00	0.000	0.000	0.000	0.000	0.052	0.052
61:35:00	0.000	0.000	0.000	0.000	0.052	0.052
61:40:00	0.000	0.000	0.000	0.000	0.052	0.052
61:45:00	0.000	0.000	0.000	0.000	0.052	0.052
61:50:00	0.000	0.000	0.000	0.000	0.052	0.052
61:55:00	0.000	0.000	0.000	0.000	0.052	0.052
62:00:00	0.000	0.000	0.000	0.000	0.052	0.052
62:05:00	0.000	0.000	0.000	0.000	0.051	0.051
62:10:00	0.000	0.000	0.000	0.000	0.051	0.051
62:15:00	0.000	0.000	0.000	0.000	0.051	0.051
62:20:00	0.000	0.000	0.000	0.000	0.051	0.051
62:25:00	0.000	0.000	0.000	0.000	0.051	0.051
62:30:00	0.000	0.000	0.000	0.000	0.051	0.051
62:35:00	0.000	0.000	0.000	0.000	0.051	0.051
62:40:00	0.000	0.000	0.000	0.000	0.050	0.050
62:45:00	0.000	0.000	0.000	0.000	0.050	0.050
62:50:00	0.000	0.000	0.000	0.000	0.050	0.050
62:55:00	0.000	0.000	0.000	0.000	0.050	0.050
63:00:00	0.000	0.000	0.000	0.000	0.050	0.050
63:05:00	0.000	0.000	0.000	0.000	0.050	0.050
63:10:00	0.000	0.000	0.000	0.000	0.050	0.050
63:15:00	0.000	0.000	0.000	0.000	0.049	0.049
63:20:00	0.000	0.000	0.000	0.000	0.049	0.049
63:25:00	0.000	0.000	0.000	0.000	0.049	0.049
63:30:00	0.000	0.000	0.000	0.000	0.049	0.049
63:35:00	0.000	0.000	0.000	0.000	0.049	0.049
63:40:00	0.000	0.000	0.000	0.000	0.049	0.049
63:45:00	0.000	0.000	0.000	0.000	0.049	0.049
63:50:00	0.000	0.000	0.000	0.000	0.049	0.049
63:55:00	0.000	0.000	0.000	0.000	0.048	0.048
64:00:00	0.000	0.000	0.000	0.000	0.048	0.048

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
64:05:00	0.000	0.000	0.000	0.000	0.048	0.048
64:10:00	0.000	0.000	0.000	0.000	0.048	0.048
64:15:00	0.000	0.000	0.000	0.000	0.048	0.048
64:20:00	0.000	0.000	0.000	0.000	0.048	0.048
64:25:00	0.000	0.000	0.000	0.000	0.048	0.048
64:30:00	0.000	0.000	0.000	0.000	0.048	0.048
64:35:00	0.000	0.000	0.000	0.000	0.047	0.047
64:40:00	0.000	0.000	0.000	0.000	0.047	0.047
64:45:00	0.000	0.000	0.000	0.000	0.047	0.047
64:50:00	0.000	0.000	0.000	0.000	0.047	0.047
64:55:00	0.000	0.000	0.000	0.000	0.047	0.047
65:00:00	0.000	0.000	0.000	0.000	0.047	0.047
65:05:00	0.000	0.000	0.000	0.000	0.047	0.047
65:10:00	0.000	0.000	0.000	0.000	0.047	0.047
65:15:00	0.000	0.000	0.000	0.000	0.046	0.046
65:20:00	0.000	0.000	0.000	0.000	0.046	0.046
65:25:00	0.000	0.000	0.000	0.000	0.046	0.046
65:30:00	0.000	0.000	0.000	0.000	0.046	0.046
65:35:00	0.000	0.000	0.000	0.000	0.046	0.046
65:40:00	0.000	0.000	0.000	0.000	0.046	0.046
65:45:00	0.000	0.000	0.000	0.000	0.046	0.046
65:50:00	0.000	0.000	0.000	0.000	0.046	0.046
65:55:00	0.000	0.000	0.000	0.000	0.045	0.045
66:00:00	0.000	0.000	0.000	0.000	0.045	0.045
66:05:00	0.000	0.000	0.000	0.000	0.045	0.045
66:10:00	0.000	0.000	0.000	0.000	0.045	0.045
66:15:00	0.000	0.000	0.000	0.000	0.045	0.045
66:20:00	0.000	0.000	0.000	0.000	0.045	0.045
66:25:00	0.000	0.000	0.000	0.000	0.045	0.045
66:30:00	0.000	0.000	0.000	0.000	0.045	0.045
66:35:00	0.000	0.000	0.000	0.000	0.044	0.044
66:40:00	0.000	0.000	0.000	0.000	0.044	0.044
66:45:00	0.000	0.000	0.000	0.000	0.044	0.044
66:50:00	0.000	0.000	0.000	0.000	0.044	0.044
66:55:00	0.000	0.000	0.000	0.000	0.044	0.044

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
67:00:00	0.000	0.000	0.000	0.000	0.044	0.044

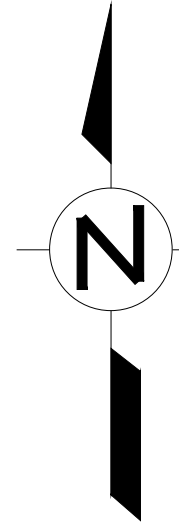
Appendix

Catchment descriptors

Name	Value	User-defined value used?
Area (km ²)	1.25	No
ALTBAR	56	No
ASPBAR	304	No
ASPVAR	0.79	No
BFIHOST	0.34	No
BFIHOST19	0.39	No
DPLBAR (km)	1.03	No
DPSBAR (mkm ⁻¹)	20.3	No
FARL	0.99	No
LDP	1.76	No
PROPWET	0.29	No
RMED1H	11.5	No
RMED1D	29	No
RMED2D	36.7	No
SAAR (mm)	648	No
SAAR4170 (mm)	649	No
SPRHOST	41.61	No
URBEXT2000	0.1	No
URBEXT1990	0.08	No
URBCONC	0.58	No
URBLOC	0.97	No
DDF parameter C	-0.03	No
DDF parameter D1	0.27	No
DDF parameter D2	0.27	No
DDF parameter D3	0.32	No
DDF parameter E	0.3	No
DDF parameter F	2.63	No
DDF parameter C (1km grid value)	-0.03	No
DDF parameter D1 (1km grid value)	0.26	No
DDF parameter D2 (1km grid value)	0.26	No
DDF parameter D3 (1km grid value)	0.33	No
DDF parameter E (1km grid value)	0.3	No
DDF parameter F (1km grid value)	2.62	No

Appendix C

[illegible]



GENERAL NOTES

Inspective of the information provided by a utility surveyor and stationary surveyors, the integration of the information to the extreme caution and in accordance with HSE Guidelines - HSE47 'Avoiding Danger from the Ground'.

Utilities may continue outside the survey area. Any point marks outside the survey area are for investigative purposes only and may not represent the full extent of the sub-area features.

Where topic indicates a utility exists but cannot be positively confirmed within the survey area, the location is marked as AGSI is recorded. All assumed service locations (ASRL) have been highlighted with a background yellow colour for visual reference.

ASRLs are utilised across the site in all accessible areas where ground conditions, obstructions allow. Areas of dense vegetation, unclear areas, marsh land, steep slopes, etc. may not be accessible.

Vertical & Horizontal Position: Vertical position (depth) is indicative to the top of the utility/feature and should not be taken as exact, as this could be the result of a surface level measurement. Where depth information from the technology is unclear, depth is not shown.

Warnings

ASRLs does not provide an accurate representation of the sub-features. Utilities have been detected using non-invasive technologies only and they are not intended to be used as a replacement for traditional methods of surveying or NRS Surveying Ltd control. Therefore, some utilities may be missed or misidentified. The information is not intended to be used as a replacement for traditional methods of surveying or NRS Surveying Ltd control. Therefore, some utilities may be missed or misidentified. The information is not intended to be used as a replacement for traditional methods of surveying or NRS Surveying Ltd control. Therefore, some utilities may be missed or misidentified.

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Email: nrsurveying@gmail.com

Appendix D



1. All dimensions are in metres unless stated otherwise.
2. Do not scale from this drawing. Only written dimensions are to be used.
3. **ANY VARIANCE OR DISCREPANCY MUST BE REPORTED BACK TO RCP ENGINEERING BEFORE WORK BEGINS.**

Site Boundary	
Surface Water Drainage (Subject to Detailed Design)	
Onsite lined attenuation basin to accommodate onsite surface water run-off	
Foul Water Drainage (Subject to Detailed Design)	
Foul Water Drainage Rising Main (Subject to Detailed Design)	
Proposed culvert (As part of existing surface water flood risk mitigation measures) (Subject to Detailed Design)	
Proposed cut off/conveyance swale (As part of existing surface water flood risk mitigation measures) (Subject to Detailed Design)	
Basin to accommodate compensatory storage requirements for existing flood risk from surface water (As part of existing surface water flood risk mitigation measures) (Subject to Detailed Design)	

A	29.11.24	Additional flood mitigation works proposed			TRS
Rev.	Date	Details			By Chkd Appr

Client:-



Site:-
Land North of
Reading Road
Arborfield

Drawing Title:-
Outline Drainage
Strategy Layout

Date:	November 2024	Scales:	1:1000 at A1
Drawn:	TRS	Checked:	LAD
		Approved:	TRS
Drawing No.			

DAN/E0254/001A

FOR INFORMATION ONLY

