

North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by:	Checked by:	Approved By:	
	MR	BL	BL	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase (1)	Company Address:			

Status
OK
OK
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Flood Risk
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North West Cambridge Masterplan:	Date: 14/05/2025			
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**FEH: 30 years: Increase Rainfall (%): +35: Critical Storm Per Item: Rank By: Max.
Outflow**

North West Cambridge Masterplan:						Date: 14/05/2025										
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Type: Stormwater Controls Summary																
Storm Phase: Phase (1)																

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
Swale E (0)	FEH: 30 years: +35 %: 15 mins: Winter	18.844	13.728	0.161	0.428	512.0	99.085	0.000	0.000	360.0	237.648	6	85.431
Swale C (0)	FEH: 30 years: +35 %: 15 mins: Winter	16.353	14.654	0.138	0.654	406.9	47.364	0.000	0.000	252.7	201.505	3	97.131
Swale H2 - Ex	FEH: 30 years: +35 %: 15 mins: Winter	14.629	13.894	0.353	0.594	826.3	100.514	0.000	0.000	949.9	911.124	3	91.251
Swale G - Ex	FEH: 30 years: +35 %: 15 mins: Winter	20.828	17.768	0.158	0.168	658.6	127.151	0.000	0.000	537.2	442.404	6	38.569
Swale D (1)	FEH: 30 years: +35 %: 15 mins: Winter	20.796	17.462	0.055	0.212	88.3	19.041	0.000	0.000	64.6	46.120	6	98.884
Tank (1)	FEH: 30 years: +35 %: 960 mins: Winter	14.260	14.260	0.985	0.985	706.2	12310.987	0.000	0.000	219.4	20110.416	538	38.445
Swale I - Ex	FEH: 30 years: +35 %: 30 mins: Winter	15.390	15.113	0.895	0.813	2715.8	684.405	0.000	0.000	2298.2	4022.004	4	48.305
Swale H - Ex	FEH: 30 years: +35 %: 30 mins: Winter	17.315	15.777	0.321	0.285	923.4	71.759	0.000	0.000	912.0	1317.180	1	93.493
Swale I - 2	FEH: 30 years: +35 %: 15 mins: Winter	15.351	15.342	0.331	0.542	365.4	273.811	0.000	0.000	457.8	123.345	38	71.875
Tank (3)	FEH: 30 years: +35 %: 1440 mins: Winter	15.480	15.480	0.680	0.680	435.0	14289.973	0.000	0.000	29.5	3131.687	8079	31.953
Swale F - Ex	FEH: 30 years: +35 %: 60 mins: Winter	22.216	22.216	0.804	1.416	564.0	466.139	0.000	0.000	206.5	1046.515	29	70.320
Swale A (0)	FEH: 30 years: +35 %: 15 mins: Winter	16.624	13.325	0.120	0.325	357.3	36.448	0.000	0.000	266.4	168.904	2	94.550
Swale B (0)	FEH: 30 years: +35 %: 30 mins: Winter	19.890	17.208	0.038	0.208	48.0	13.346	0.000	0.000	47.8	52.732	7	99.147
Detention Basin 1	FEH: 30 years: +35 %: 480 mins: Winter	13.105	13.105	0.392	0.392	122.9	1391.002	0.000	0.000	14.0	622.420	1102	41.067
Detention Basin 2	FEH: 30 years: +35 %: 1440 mins: Winter	13.741	13.741	0.541	0.541	77.3	2568.168	0.000	0.000	26.4	3732.443	983	17.465
Swale D (0)	FEH: 30 years: +35 %: 30 mins: Winter	17.302	14.058	0.127	0.708	308.2	114.973	0.000	0.000	196.0	307.669	12	93.379

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Status
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North West Cambridge Masterplan:	Date: 14/05/2025		
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FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe (5)	FEH: 2 years: +0 %: 30 mins: Winter	Pipe	Swale H - Ex	Swale H2 - Ex	18.519	15.672	0.170	474.409	3.4	0.04	300.8	OK
Pipe (11)	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	Tank (3)	Swale I - 2	15.800	14.865	0.112	18.869	0.0	0	0.0	OK
Pipe (4)	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale I - 2	Swale I - Ex	16.020	14.934	0.373	0.000	0.6	0.04	95.5	OK
Pipe (9)	FEH: 2 years: +0 %: 30 mins: Winter	Pipe	Swale F - Ex	Swale G - Ex	23.000	21.169	0.300	290.589	2.3	1.74	157.2	Surcharged
Pipe (2)	FEH: 2 years: +0 %: 30 mins: Winter	Pipe	Swale I - Ex	Tank (1)	15.780	14.802	0.389	1240.683	2.9	0.3	816.9	OK
Pipe (7)	FEH: 2 years: +0 %: 30 mins: Winter	Pipe	Swale H2 - Ex	Tank (1)	15.976	13.535	0.199	478.898	3.1	0.45	301.9	OK
Pipe (6)	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale G - Ex	Tank (1)	17.800	17.704	0.112	213.631	5.2	0.03	255.4	OK
Pipe	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale A (0)	Detention Basin 1	14.300	13.079	0.124	56.847	3.2	0.27	85.2	OK
Pipe (3)	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale C (0)	Detention Basin 1	16.500	14.081	0.118	67.545	4.3	0.35	92.9	OK
Pipe (8)	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale E (0)	Detention Basin 2	14.100	13.394	0.159	80.122	2.2	0.46	122.2	OK
Pipe (13)	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale D (0)	Detention Basin 2	15.000	13.451	0.174	73.380	2.0	0.91	100.9	OK
Pipe (10)	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale D (1)	Swale D (0)	19.300	17.295	0.095	20.960	1.2	0.17	25.7	OK
Pipe (12)	FEH: 2 years: +0 %: 1440 mins: Winter	Pipe	Detention Basin 1	Simple Junction (1)	13.363	13.009	0.114	1776.371	0.9	0.92	13.4	Surcharged
Pipe (14)	FEH: 2 years: +0 %: 1440 mins: Winter	Pipe	Detention Basin 2	Simple Junction	13.850	13.646	0.103	3110.112	1.3	0.42	23.5	Surcharged
Pipe (1)	FEH: 2 years: +0 %: 30 mins: Winter	Pipe	Swale B (0)	Swale C (0)	19.300	17.051	0.062	25.669	1.9	0.1	18.2	OK

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FEH: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe (5)	FEH: 100 years: +40 %: 30 mins: Winter	Pipe	Swale H - Ex	Swale H2 - Ex	18.519	15.858	0.376	1778.806	4.6	0.17	1247.0	OK
Pipe (11)	FEH: 100 years: +40 %: 1440 mins: Winter	Pipe	Tank (3)	Swale I - 2	15.800	15.748	0.229	346.030	0.5	0.34	35.6	Surcharged
Pipe (4)	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale I - 2	Swale I - Ex	16.020	15.381	0.837	0.000	1.2	0.25	673.9	OK
Pipe (9)	FEH: 100 years: +40 %: 60 mins: Winter	Pipe	Swale F - Ex	Swale G - Ex	23.000	22.247	0.300	1287.155	3.3	2.56	232.0	Surcharged
Pipe (2)	FEH: 100 years: +40 %: 30 mins: Winter	Pipe	Swale I - Ex	Tank (1)	15.780	15.414	0.985	5073.356	3.6	1	2677.7	Surcharged
Pipe (7)	FEH: 100 years: +40 %: 30 mins: Summer	Pipe	Swale H2 - Ex	Tank (1)	15.976	13.785	0.528	1571.018	3.9	1.93	1302.4	OK
Pipe (6)	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale G - Ex	Tank (1)	17.800	17.764	0.223	552.586	6.8	0.08	684.1	Flood Risk
Pipe	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale A (0)	Detention Basin 1	14.300	13.200	0.375	229.455	3.6	1.01	316.3	OK
Pipe (3)	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale C (0)	Detention Basin 1	16.500	14.332	0.300	273.977	5.0	1.06	277.0	Surcharged
Pipe (8)	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale E (0)	Detention Basin 2	14.100	13.530	0.385	323.106	2.9	1.74	462.2	OK
Pipe (13)	FEH: 100 years: +40 %: 30 mins: Winter	Pipe	Swale D (0)	Detention Basin 2	15.000	13.630	0.375	410.039	2.1	2.08	229.9	OK
Pipe (10)	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale D (1)	Swale D (0)	19.300	17.345	0.202	59.754	1.6	0.57	85.6	OK
Pipe (12)	FEH: 100 years: +40 %: 360 mins: Winter	Pipe	Detention Basin 1	Simple Junction (1)	13.363	13.212	0.119	469.315	0.9	0.97	14.0	Surcharged
Pipe (14)	FEH: 100 years: +40 %: 1440 mins: Winter	Pipe	Detention Basin 2	Simple Junction	13.850	13.842	0.117	4099.107	1.4	0.52	29.1	Surcharged

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Pipe (1)	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale B (0)	Swale C (0)	19.300	17.090	0.148	45.364	2.5	0.37	67.9	OK

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FEH: 30 years: Increase Rainfall (%): +35: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe (5)	FEH: 30 years: +35 %: 30 mins: Winter	Pipe	Swale H - Ex	Swale H2 - Ex	18.519	15.806	0.316	1317.180	4.3	0.13	912.0	OK
Pipe (11)	FEH: 30 years: +35 %: 1440 mins: Winter	Pipe	Tank (3)	Swale I - 2	15.800	15.480	0.218	393.531	0.4	0.28	29.5	Surcharged
Pipe (4)	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale I - 2	Swale I - Ex	16.020	15.237	0.691	0.000	1.1	0.17	457.8	OK
Pipe (9)	FEH: 30 years: +35 %: 60 mins: Winter	Pipe	Swale F - Ex	Swale G - Ex	23.000	21.910	0.300	1046.515	2.9	2.28	206.5	Surcharged
Pipe (2)	FEH: 30 years: +35 %: 30 mins: Winter	Pipe	Swale I - Ex	Tank (1)	15.780	15.160	0.761	3723.408	3.6	0.85	2298.2	OK
Pipe (7)	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale H2 - Ex	Tank (1)	15.976	13.708	0.384	911.124	4.3	1.41	949.9	OK
Pipe (6)	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale G - Ex	Tank (1)	17.800	17.745	0.177	442.404	6.4	0.06	537.2	OK
Pipe	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale A (0)	Detention Basin 1	14.300	13.159	0.251	168.904	3.4	0.85	266.4	OK
Pipe (3)	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale C (0)	Detention Basin 1	16.500	14.200	0.300	201.505	4.8	0.96	252.7	OK
Pipe (8)	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale E (0)	Detention Basin 2	14.100	13.490	0.298	237.648	2.8	1.35	360.0	OK
Pipe (13)	FEH: 30 years: +35 %: 30 mins: Winter	Pipe	Swale D (0)	Detention Basin 2	15.000	13.567	0.375	307.669	2.0	1.77	196.0	OK
Pipe (10)	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale D (1)	Swale D (0)	19.300	17.329	0.167	46.120	1.5	0.43	64.6	OK
Pipe (12)	FEH: 30 years: +35 %: 480 mins: Winter	Pipe	Detention Basin 1	Simple Junction (1)	13.363	13.105	0.119	622.194	0.9	0.97	14.0	Surcharged
Pipe (14)	FEH: 30 years: +35 %: 1440 mins: Winter	Pipe	Detention Basin 2	Simple Junction	13.850	13.741	0.110	3731.941	1.4	0.47	26.4	Surcharged

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Pipe (1)	FEH: 30 years: +35 %: 30 mins: Winter	Pipe	Swale B (0)	Swale C (0)	19.300	17.072	0.110	52.732	2.2	0.26	47.8	OK		

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Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Chamber Shape	Diameter (m)
Swale A (0)	Manhole	542027.591	260946.178	18.600	2.100	16.500	Circular	1.200
Swale A (1)	Manhole	541968.268	260882.718	14.300	1.300	13.000	Circular	1.200
Swale B (0)	Manhole	542241.406	260824.748	22.100	2.250	19.850	Circular	1.200
Swale B (1)	Manhole	542185.812	260767.480	19.300	2.300	17.000	Circular	1.200
Swale C (0)	Manhole	542175.706	260755.934	18.600	1.800	16.800	Circular	1.200
Swale C(0)	Manhole	542116.935	260689.957	16.500	2.500	14.000	Circular	1.200
Swale D (1)	Manhole	542418.154	260671.319	22.800	3.600	19.200	Circular	1.200
Swale D (2)	Manhole	542342.103	260578.082	19.300	2.400	16.900	Circular	1.200
Swale D (0)	Manhole	542192.040	260481.240	15.000	1.650	13.350	Circular	1.200
Swale D (4)	Manhole	542280.931	260530.604	17.800	1.700	16.100	Circular	1.200
Swale D (3)	Manhole	542331.852	260567.553	18.700	1.900	16.800	Circular	1.200
Swale E (0)	Manhole	542427.269	260369.083	19.300	3.300	16.000	Circular	1.200
Swale E (1)	Manhole	542272.059	260319.131	15.000	1.530	13.470	Circular	1.200
Simple Junction	Simple Junction	541974.570	260819.144					
Simple Junction (1)	Simple Junction	542105.786	260412.867					

Name	Lock
Swale A (0)	None
Swale A (1)	None
Swale B (0)	None
Swale B (1)	None
Swale C (0)	None
Swale C(0)	None
Swale D (1)	None
Swale D (2)	None
Swale D (0)	None
Swale D (4)	Levels
Swale D (3)	None
Swale E (0)	None
Swale E (1)	None
Simple Junction	
Simple Junction (1)	

Inlets

Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
Swale A (0)	Inlet	Road 1 Catchment Area (4)	(None)	No Restriction
	Inlet (1)	B1+B2/2+B3/2	(None)	No Restriction
Swale A (1)	Inlet	Pipe1.0	(None)	No Restriction
Swale B (0)	Inlet	B2/2+C2/2	(None)	No Restriction
Swale B (1)	Inlet	Pipe2.0	(None)	No Restriction
Swale C (0)	Inlet	C1/2+B3/2 Road 2 Pipe2.1	(None)	No Restriction
		Pipe2.2		
Swale C(0)	Inlet	Pipe2.2	(None)	No Restriction
Swale D (1)	Inlet	C2/2+D2	(None)	No Restriction
Swale D (2)	Inlet	Pipe3.0	(None)	No Restriction
Swale D (0)	Inlet	C1/2+D1/2	(None)	No Restriction
	Inlet (1)	Pipe3.3	(None)	No Restriction
Swale D (4)	Inlet	Pipe3.2	(None)	No Restriction
Swale D (3)	Inlet	Pipe3.1 Road 3	(None)	No Restriction
Swale E (0)	Inlet (1)	D1/2+E1+E2 Catchment Area (11)	(None)	No Restriction
Swale E (1)	Inlet	Pipe4.0	(None)	No Restriction
Simple Junction	Inlet	Pipe	(None)	No Restriction
Simple Junction (1)	Inlet	Pipe (1)	(None)	No Restriction

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Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
Swale A (0)	Outlet	Pipe1.0	Free Discharge
Swale A (1)	Outlet	Pipe1.1	Free Discharge
Swale B (0)	Outlet	Pipe2.0	Free Discharge
Swale B (1)	Outlet	Pipe2.1	Free Discharge
Swale C (0)	Outlet (1)	Pipe2.2	Free Discharge
Swale C(0)	Outlet	Pipe2.3	Free Discharge
Swale D (1)	Outlet	Pipe3.0	Free Discharge
Swale D (2)	Outlet	Pipe3.1	Free Discharge
Swale D (0)	Outlet	Pipe3.3	Free Discharge
Swale D (4)	Outlet	Pipe3.3	Free Discharge
Swale D (3)	Outlet	Pipe3.2	Free Discharge
Swale E (0)	Outlet (1)	Pipe4.0	Free Discharge
Swale E (1)	Outlet	Pipe4.1	Free Discharge

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**Tank (1)**

Type : Tank

Dimensions		
Exceedance Level (m)	14.920	
Depth (m)	1.645	
Base Level (m)	13.275	
Freeboard (mm)	0	
Initial Depth (m)	0.000	
Porosity (%)	100	
Average Slope (1:X)	0.00	
Total Volume (m³)	20000.045	
Depth (m)	Area (m²)	Volume (m³)
0.000	12500.00	0.000
1.600	12500.00	20000.000

Inlets	
Inlet (3)	
Inlet Type	Point Inflow
Incoming Item(s)	Pipe (2)
Bypass Destination	(None)
Capacity Type	No Restriction
Inlet (4)	
Inlet Type	Point Inflow
Incoming Item(s)	Pipe (7)
Bypass Destination	(None)
Capacity Type	No Restriction
Inlet (5)	
Inlet Type	Point Inflow
Incoming Item(s)	Pipe (6)
Bypass Destination	(None)
Capacity Type	No Restriction

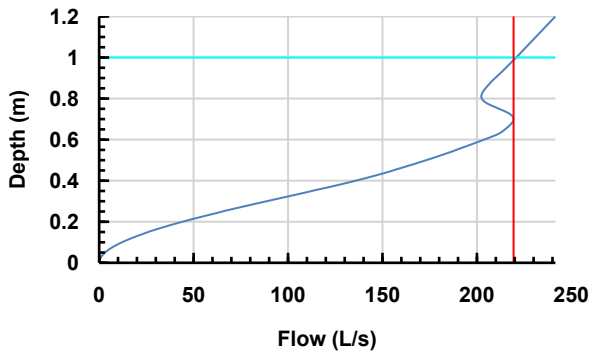
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Outlets

Outlet

Outgoing Connection	(None)
Outlet Type	Hydro-Brake®
Invert Level (m)	13.275
Design Depth (m)	1.000
Design Flow (L/s)	221.0
Objective	Minimise Upstream Storage Requirements
Application	Surface Water Only
Sump Available	☐

Unit Reference	CHE-0480-2210-1000-2210
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Advanced

Perimeter	Circular
Length (m)	266.015

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 **Tank (3)**

Type : Tank

Dimensions

Exceedance Level (m)	15.800
Depth (m)	1.000
Base Level (m)	14.800
Freeboard (mm)	0
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	0.00
Total Volume (m³)	21000.000

Depth (m)	Area (m²)	Volume (m³)
0.000	21000.00	0.000
1.000	21000.00	21000.000

Inlets

Inlet

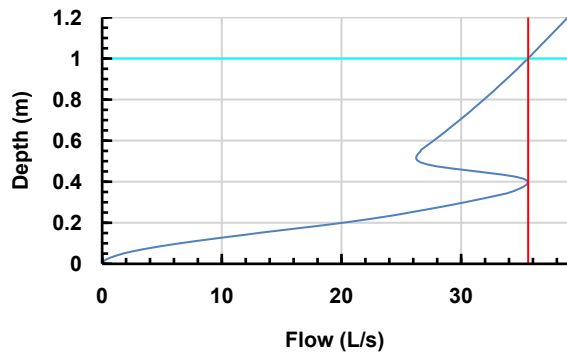
Inlet Type	Point Inflow
Incoming Item(s)	H & J
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (11)
Outlet Type	Hydro-Brake®
Invert Level (m)	14.900
Design Depth (m)	1.000
Design Flow (L/s)	35.61
Objective	Minimise Upstream Storage Requirements
Application	Surface Water Only
Sump Available	☐

Unit Reference	CHE-0243-3561-1000-3561
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Advanced

Perimeter	Circular
Length (m)	154.156

North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by: MR	Checked by: BL	Approved By: BL	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: Phase (1)				



Detention Basin 1

Type : Pond

Dimensions

Exceedance Level (m)	13.300
Depth (m)	0.587
Base Level (m)	12.713
Freeboard (mm)	0
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.00
Total Volume (m³)	2149.738

Depth (m)	Area (m²)	Volume (m³)
0.000	3475.00	0.000
0.587	3852.74	2149.738

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Catchment Area (16)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	Pipe1.1
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (3)

Inlet Type	Point Inflow
Incoming Item(s)	Pipe2.3
Bypass Destination	(None)
Capacity Type	No Restriction

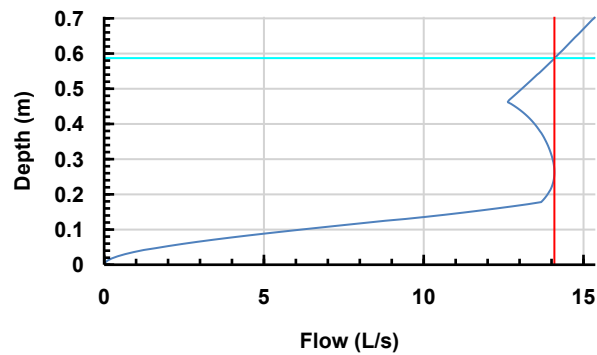
North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by: MR	Checked by: BL	Approved By: BL	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: Phase (1)				

Outlets

Outlet

Outgoing Connection	Pipe
Outlet Type	Hydro-Brake®
Invert Level (m)	12.713
Design Depth (m)	0.587
Design Flow (L/s)	14.1
Objective	Minimise Upstream Storage Requirements
Application	Surface Water Only
Sump Available	☒

Unit Reference	SHE-0175-1410-0587-1410
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Advanced

Perimeter	Circular
Length (m)	280.420
Friction Scheme	Manning's n
n	0.035

North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by: MR	Checked by: BL	Approved By: BL	
Report Details: Type: Stormwater Controls Storm Phase: Phase (1)	Company Address:			



Detention Basin 2

Type : Pond

Dimensions

Exceedance Level (m)	13.850
Depth (m)	0.650
Base Level (m)	13.200
Freeboard (mm)	0
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.00
Total Volume (m³)	2744.675

Depth (m)	Area (m²)	Volume (m³)
0.000	4000.00	0.000
0.650	4449.14	2744.675

Inlets

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	Pipe4.1
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Pipe3.3
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (3)

Inlet Type	Point Inflow
Incoming Item(s)	Catchment Area (17)
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (1)
Outlet Type	Orifice
Diameter (m)	0.146
Coefficient of Discharge	0.600
Invert Level (m)	13.200

Advanced

Perimeter	Circular
Length (m)	223.540
Friction Scheme	Manning's n
n	0.035

North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by: MR	Checked by: BL	Approved By: BL	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: Phase (1)				



Swale H2 - Ex

Type : Swale

Swale

Exceedance Level (m)	15.000
Depth (m)	1.700
Base Level (m)	13.300
Top Width (m)	13.000
Side Slope (1:X)	3.53
Base Width (m)	1.000
Freeboard (mm)	10
Length (m)	97.604
Long. Slope (1:X)	100.00
Filtration Rate (m/hr)	50.0
Friction Scheme	Manning's n
n	0.035
Total Volume (m³)	1148.833

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	F1 2/3 + G/3
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	Pipe (5)
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (7)
Outlet Type	Free Discharge

Advanced

Swale

Porosity (%)	100
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North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by: MR	Checked by: BL	Approved By: BL	
Report Details: Type: Stormwater Controls Storm Phase: Phase (1)	Company Address:			



Swale G - Ex

Type : Swale

Swale

Exceedance Level (m)	17.800
Depth (m)	0.200
Base Level (m)	17.600
Top Width (m)	12.000
Side Slope (1:X)	27.50
Base Width (m)	1.000
Freeboard (mm)	10
Length (m)	175.000
Long. Slope (1:X)	57.00
Filtration Rate (m/hr)	50.0
Friction Scheme	Manning's n
n	0.035
Total Volume (m³)	206.981

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	F-2 F1/3+ F2/2 Catchment Area (10) Pipe (9)
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	Catchment Area (9)
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Outlets

Outlet (1)

Outgoing Connection	Pipe (6)
Outlet Type	Free Discharge

Advanced

Swale

Porosity (%)	100
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North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by: MR	Checked by: BL	Approved By: BL	
Report Details: Type: Stormwater Controls Storm Phase: Phase (1)	Company Address:			



Swale I -Ex

Type : Swale

Swale

Exceedance Level (m)	15.585
Depth (m)	1.285
Base Level (m)	14.300
Top Width (m)	9.210
Side Slope (1:X)	3.00
Base Width (m)	1.500
Freeboard (mm)	10
Length (m)	195.000
Long. Slope (1:X)	1000.00
Filtration Rate (m/hr)	50.0
Friction Scheme	Manning's n
n	0.035
Total Volume (m³)	1323.928

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	G/3 Phase 1 Plot Flow - 1 Phase 1 - 1
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	Pipe (4)
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Outlets

Outlet (1)

Outgoing Connection	Pipe (2)
Outlet Type	Free Discharge

Advanced

Swale

Porosity (%)	100
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North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by: MR	Checked by: BL	Approved By: BL	
Report Details: Type: Stormwater Controls Storm Phase: Phase (1)	Company Address:			



Swale H - Ex

Type : Swale

Swale

Exceedance Level (m)	17.017
Depth (m)	1.525
Base Level (m)	15.492
Top Width (m)	14.000
Side Slope (1:X)	4.26
Base Width (m)	1.000
Freeboard (mm)	10
Length (m)	97.604
Long. Slope (1:X)	65.00
Filtration Rate (m/hr)	50.0
Friction Scheme	Manning's n
n	0.035
Total Volume (m³)	1102.808

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Phase 1 Plot Flow - 2
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	Phase 1 - 2 F2/2
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (5)
Outlet Type	Free Discharge

Advanced

Swale

Porosity (%)	100
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North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by: MR	Checked by: BL	Approved By: BL	
Report Details: Type: Stormwater Controls Storm Phase: Phase (1)	Company Address:			



Swale I -2

Type : Swale

Swale

Exceedance Level (m)	15.800
Depth (m)	1.000
Base Level (m)	14.800
Top Width (m)	7.500
Side Slope (1:X)	3.00
Base Width (m)	1.500
Freeboard (mm)	10
Length (m)	220.000
Long. Slope (1:X)	1000.00
Filtration Rate (m/hr)	50.0
Friction Scheme	Manning's n
n	0.035
Total Volume (m³)	973.566

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Pipe (11)
Bypass Destination	Phase 1 Plot Flow - 1 (1)
Inlet Destination	(None)
Capacity Type	Ponding Area
	No Restriction

Outlets

Outlet (1)

Outgoing Connection	Pipe (4)
Outlet Type	Free Discharge

Advanced

Swale

Porosity (%)	100
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North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by: MR	Checked by: BL	Approved By: BL	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: Phase (1)				



Swale F - Ex

Type : Swale

Swale

Exceedance Level (m)	23.000
Depth (m)	2.200
Base Level (m)	20.800
Top Width (m)	15.000
Side Slope (1:X)	3.18
Base Width (m)	1.000
Freeboard (mm)	10
Length (m)	90.000
Long. Slope (1:X)	147.00
Filtration Rate (m/hr)	50.0
Friction Scheme	Manning's n
n	0.035
Total Volume (m³)	1570.529

Inlets

Inlet

Inlet Type	Point Inflow
	Phase 1 - 3
Incoming Item(s)	Phase 1 Plot Flow - 3
	Catchment Area (11) (2)
	F3
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (9)
Outlet Type	Free Discharge

Advanced

Swale

Porosity (%)	100
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North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Connections Storm Phase: Phase (1)	Company Address:		



Name	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Upstream Cover Level (m)	Upstream Invert Level (m)
Pipe (5)	15.989	Pipe	13.413		0.6	1000	18.519	15.492
Pipe (11)	36.994	Pipe	369.939		0.6	375	15.800	14.900
Pipe (4)	29.585	Pipe	97.001		0.6	1000	16.020	14.800
Pipe (9)	19.497	Pipe	149.980		0.6	300	23.000	20.800
Pipe (2)	95.362	Pipe	95.362		0.6	1000	15.780	14.300
Pipe (7)	37.212	Pipe	1488.492		0.6	1000	15.976	13.300
Pipe (6)	31.614	Pipe	8.649		0.6	1000	17.800	16.955
Pipe3.3	39.603	Pipe	264.017		0.6	375	15.000	13.350
Pipe1.0	86.870	Pipe	24.820		0.6	375	18.600	16.500
Pipe1.1	9.581	Pipe	33.383		0.6	375	14.300	13.000
Pipe2.0	79.814	Pipe	28.005		0.6	300	22.100	19.850
Pipe2.1	15.344	Pipe	76.720		0.6	300	19.300	17.000
Pipe2.2	88.357	Pipe	31.556		0.6	450	18.600	16.800
Pipe2.3	11.931	Pipe	9.270		0.6	300	16.500	14.000
Pipe3.0	120.320	Pipe	52.313		0.6	375	22.800	19.200
Pipe3.3	101.677	Pipe	36.974		0.6	375	17.800	16.100
Pipe3.1	14.695	Pipe	146.947		0.6	375	19.300	16.900
Pipe3.2	62.915	Pipe	89.878		0.6	375	18.700	16.800
Pipe4.0	163.049	Pipe	64.446		0.6	525	19.300	16.000
Pipe4.1	68.128	Pipe	252.326		0.6	450	15.000	13.470
Pipe	27.449	Pipe	152.496		0.6	150	13.300	12.713
Pipe (1)	56.040	Pipe	181.164		0.6	225	13.850	13.200

Name	Downstream Cover Level (m)	Downstream Invert Level (m)	Part Family	Lock	Flow Restriction (L/s)
Pipe (5)	15.976	14.300		Levels	
Pipe (11)	16.020	14.800		All	35.61
Pipe (4)	15.780	14.495		Levels	
Pipe (9)	22.100	20.670		All	
Pipe (2)	14.920	13.300		All	
Pipe (7)	14.920	13.275		All	
Pipe (6)	14.920	13.300		Levels	
Pipe3.3	14.000	13.200		All	
Pipe1.0	14.300	13.000		Levels	532.18
Pipe1.1	13.300	12.713		Levels	532.18
Pipe2.0	19.300	17.000		Levels	
Pipe2.1	18.600	16.800		Levels	
Pipe2.2	16.500	14.000		Levels	
Pipe2.3	13.300	12.713		Levels	
Pipe3.0	19.300	16.900		All	
Pipe3.3	15.000	13.350		All	
Pipe3.1	18.700	16.800		All	
Pipe3.2	17.800	16.100		All	
Pipe4.0	15.000	13.470		Levels	
Pipe4.1	14.000	13.200		Levels	
Pipe	13.297	12.533		None	14.10
Pipe (1)	13.400	12.891		None	33.80

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Inflow Summary Storm Phase: Phase (1)	Company Address:		



Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
B1+B2/2+B3/2	Swale A (0)	4.4						
B2/2+C2/2	Swale B (0)	5.6						
C1/2+B3/2	Swale C (0)	3.0						
C1/2+D1/2	Swale D (0)	6.0						
C2/2+D2	Swale D (1)	8.7						
Catchment Area (4)	Swale A (0)		Time of Concentration	0.093	100	0	100	0.093
Catchment Area (9)	Swale G - Ex		Time of Concentration	0.400	100	0	100	0.400
Catchment Area (10)	Swale G - Ex		Time of Concentration	0.529	100	0	100	0.529
Catchment Area (11)	Swale E (0)		Time of Concentration	0.790	100	0	100	0.790
Catchment Area (11) (2)	Swale F - Ex		Time of Concentration	0.396	100	0	100	0.396
Catchment Area (16)	Detention Basin 1		Time of Concentration	0.450	100	0	100	0.450
Catchment Area (17)	Detention Basin 2		Time of Concentration	0.500	100	0	100	0.500
D1/2+E1+E2	Swale E (0)	11.9						
F1 2/3 + G/3	Swale H2 - Ex	4.4						
F1/3+ F2/2	Swale G - Ex	2.7						
F2/2	Swale H - Ex	0.8						
F3	Swale F - Ex	1.5						
F-2	Swale G - Ex	0.9						
G/3	Swale I -Ex	0.7						
H &J	Tank (3)		Time of Concentration	19.170	100	0	100	19.170
Phase 1 - 1	Swale I -Ex		Time of Concentration	11.400	100	0	100	11.400
Phase 1 - 2	Swale H - Ex		Time of Concentration	3.800	100	0	100	3.800
Phase 1 - 3	Swale F - Ex		Time of Concentration	2.000	100	0	100	2.000
Phase 1 Plot Flow - 1	Swale I -Ex	31.7						
Phase 1 Plot Flow - 1 (1)	Swale I -2	31.7						
Phase 1 Plot Flow - 2	Swale H - Ex	28.1						
Phase 1 Plot Flow - 3	Swale F - Ex	15.0						
Road 1	Swale A (0)		Time of Concentration	0.566	100	0	100	0.566
Road 2	Swale C (0)		Time of Concentration	0.539	100	0	100	0.539
Road 3	Swale D (3)		Time of Concentration	0.432	100	0	100	0.432
TOTAL		157.1		41.066				41.066

North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by: MR	Checked by: BL	Approved By: BL	
Report Details:	Company Address:			
Type: Network Design Criteria Storm Phase: Phase (1)				

Flow Options

Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

Pipe Options

Lock Slope Options	None
Design Options	Minimise Excavation
Design Level	Level Soffits
Min. Cover Depth (m)	0.600
Min. Slope (1:X)	500.00
Max. Slope (1:X)	40.00
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	☐
Reduce Channel Depths	☐

Pipe Size Library

Default

Add. Increment (mm)	75
Max. Diameter (mm)	0

Diameter (mm)	Min. Slope (1:X)	Max. Slope (1:X)
100	0.00	0.00
150	0.00	0.00

North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by: MR	Checked by: BL	Approved By: BL	
Report Details: Type: Network Design Criteria Storm Phase: Phase (1)	Company Address:			

Manhole Options

Apply Offset ☐

Manhole Size Library

Default

Diameter / Width

Connection (mm)	Diameter / Length (m)	Width (m)
0	1.200	0.000
375	1.350	0.000
500	1.500	0.000
750	1.800	0.000

Additional Sizing

Connection (mm)	900
Diameter / Length (m)	0.900
Width (m)	0.000

Depth

Depth (m)	Diameter / Length (m)	Width (m)
0.000	1.050	0.000
1.500	1.200	0.000

Access

Depth (m)	Ladder Protrusion (mm)
0.000	130
3.000	230

Benching Requirements

Landing Width (mm)	500
Benching Width (mm)	225

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Outfall Details Storm Phase: Phase (1)	Company Address:		



Outfalls

Outfall	Outfall Type	Fixed Surcharged Level (m)	Level Curve
Tank (1)	Free Discharge		
Simple Junction	Fixed Surcharged Level	12.500	
FEH : 2 years: +0 %: 15 mins: Summer		12.500	
FEH : 2 years: +0 %: 15 mins: Winter		12.500	
FEH : 100 years: +40 %: 15 mins: Summer		12.500	
FEH : 100 years: +40 %: 15 mins: Winter		12.500	
FEH : 30 years: +35 %: 15 mins: Summer		12.500	
FEH : 30 years: +35 %: 15 mins: Winter		12.500	
FEH : 2 years: +0 %: 30 mins: Summer		12.500	
FEH : 2 years: +0 %: 30 mins: Winter		12.500	
FEH : 100 years: +40 %: 30 mins: Summer		12.500	
FEH : 100 years: +40 %: 30 mins: Winter		12.500	
FEH : 30 years: +35 %: 30 mins: Summer		12.500	
FEH : 30 years: +35 %: 30 mins: Winter		12.500	
FEH : 2 years: +0 %: 60 mins: Summer		12.500	
FEH : 2 years: +0 %: 60 mins: Winter		12.500	
FEH : 100 years: +40 %: 60 mins: Summer		12.500	
FEH : 100 years: +40 %: 60 mins: Winter		12.500	
FEH : 30 years: +35 %: 60 mins: Summer		12.500	
FEH : 30 years: +35 %: 60 mins: Winter		12.500	
FEH : 2 years: +0 %: 120 mins: Summer		12.500	
FEH : 2 years: +0 %: 120 mins: Winter		12.500	
FEH : 100 years: +40 %: 120 mins: Summer		12.500	
FEH : 100 years: +40 %: 120 mins: Winter		12.500	
FEH : 30 years: +35 %: 120 mins: Summer		12.500	
FEH : 30 years: +35 %: 120 mins: Winter		12.500	
FEH : 2 years: +0 %: 180 mins: Summer		12.500	
FEH : 2 years: +0 %: 180 mins: Winter		12.500	
FEH : 100 years: +40 %: 180 mins: Summer		12.500	
FEH : 100 years: +40 %: 180 mins: Winter		12.500	
FEH : 30 years: +35 %: 180 mins: Summer		12.500	
FEH : 30 years: +35 %: 180 mins: Winter		12.500	
FEH : 2 years: +0 %: 240 mins: Summer		12.500	

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Outfall Details Storm Phase: Phase (1)	Company Address:		



FEH : 2 years: +0 %: 240 mins: Winter		12.500	
FEH : 100 years: +40 %: 240 mins: Summer		12.500	
FEH : 100 years: +40 %: 240 mins: Winter		12.500	
FEH : 30 years: +35 %: 240 mins: Summer		12.500	
FEH : 30 years: +35 %: 240 mins: Winter		12.500	
FEH : 2 years: +0 %: 360 mins: Summer		12.500	
FEH : 2 years: +0 %: 360 mins: Winter		12.500	
FEH : 100 years: +40 %: 360 mins: Summer		12.500	
FEH : 100 years: +40 %: 360 mins: Winter		12.500	
FEH : 30 years: +35 %: 360 mins: Summer		12.500	
FEH : 30 years: +35 %: 360 mins: Winter		12.500	
FEH : 2 years: +0 %: 480 mins: Summer		12.500	
FEH : 2 years: +0 %: 480 mins: Winter		12.500	
FEH : 100 years: +40 %: 480 mins: Summer		12.500	
FEH : 100 years: +40 %: 480 mins: Winter		12.500	
FEH : 30 years: +35 %: 480 mins: Summer		12.500	
FEH : 30 years: +35 %: 480 mins: Winter		12.500	
FEH : 2 years: +0 %: 600 mins: Summer		12.500	
FEH : 2 years: +0 %: 600 mins: Winter		12.500	
FEH : 100 years: +40 %: 600 mins: Summer		12.500	
FEH : 100 years: +40 %: 600 mins: Winter		12.500	
FEH : 30 years: +35 %: 600 mins: Summer		12.500	
FEH : 30 years: +35 %: 600 mins: Winter		12.500	
FEH : 2 years: +0 %: 720 mins: Summer		12.500	
FEH : 2 years: +0 %: 720 mins: Winter		12.500	
FEH : 100 years: +40 %: 720 mins: Summer		12.500	
FEH : 100 years: +40 %: 720 mins: Winter		12.500	
FEH : 30 years: +35 %: 720 mins: Summer		12.500	
FEH : 30 years: +35 %: 720 mins: Winter		12.500	
FEH : 2 years: +0 %: 960 mins: Summer		12.500	
FEH : 2 years: +0 %: 960 mins: Winter		12.500	
FEH : 100 years: +40 %: 960 mins: Summer		12.500	
FEH : 100 years: +40 %: 960 mins: Winter		12.500	
FEH : 30 years: +35 %: 960 mins: Summer		12.500	
FEH : 30 years: +35 %: 960 mins: Winter		12.500	

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Outfall Details Storm Phase: Phase (1)	Company Address:		



FEH : 2 years: +0 %: 1440 mins: Summer		12.500	
FEH : 2 years: +0 %: 1440 mins: Winter		12.500	
FEH : 100 years: +40 %: 1440 mins: Summer		12.500	
FEH : 100 years: +40 %: 1440 mins: Winter		12.500	
FEH : 30 years: +35 %: 1440 mins: Summer		12.500	
FEH : 30 years: +35 %: 1440 mins: Winter		12.500	
Simple Junction (1)	Fixed Surcharged Level	12.800	
FEH : 2 years: +0 %: 15 mins: Summer		12.800	
FEH : 2 years: +0 %: 15 mins: Winter		12.800	
FEH : 100 years: +40 %: 15 mins: Summer		12.800	
FEH : 100 years: +40 %: 15 mins: Winter		12.800	
FEH : 30 years: +35 %: 15 mins: Summer		12.800	
FEH : 30 years: +35 %: 15 mins: Winter		12.800	
FEH : 2 years: +0 %: 30 mins: Summer		12.800	
FEH : 2 years: +0 %: 30 mins: Winter		12.800	
FEH : 100 years: +40 %: 30 mins: Summer		12.800	
FEH : 100 years: +40 %: 30 mins: Winter		12.800	
FEH : 30 years: +35 %: 30 mins: Summer		12.800	
FEH : 30 years: +35 %: 30 mins: Winter		12.800	
FEH : 2 years: +0 %: 60 mins: Summer		12.800	
FEH : 2 years: +0 %: 60 mins: Winter		12.800	
FEH : 100 years: +40 %: 60 mins: Summer		12.800	
FEH : 100 years: +40 %: 60 mins: Winter		12.800	
FEH : 30 years: +35 %: 60 mins: Summer		12.800	
FEH : 30 years: +35 %: 60 mins: Winter		12.800	
FEH : 2 years: +0 %: 120 mins: Summer		12.800	
FEH : 2 years: +0 %: 120 mins: Winter		12.800	
FEH : 100 years: +40 %: 120 mins: Summer		12.800	
FEH : 100 years: +40 %: 120 mins: Winter		12.800	
FEH : 30 years: +35 %: 120 mins: Summer		12.800	
FEH : 30 years: +35 %: 120 mins: Winter		12.800	
FEH : 2 years: +0 %: 180 mins: Summer		12.800	
FEH : 2 years: +0 %: 180 mins: Winter		12.800	
FEH : 100 years: +40 %: 180 mins: Summer		12.800	
FEH : 100 years: +40 %: 180 mins: Winter		12.800	

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Outfall Details Storm Phase: Phase (1)	Company Address:		



FEH : 30 years: +35 %: 180 mins: Summer		12.800	
FEH : 30 years: +35 %: 180 mins: Winter		12.800	
FEH : 2 years: +0 %: 240 mins: Summer		12.800	
FEH : 2 years: +0 %: 240 mins: Winter		12.800	
FEH : 100 years: +40 %: 240 mins: Summer		12.800	
FEH : 100 years: +40 %: 240 mins: Winter		12.800	
FEH : 30 years: +35 %: 240 mins: Summer		12.800	
FEH : 30 years: +35 %: 240 mins: Winter		12.800	
FEH : 2 years: +0 %: 360 mins: Summer		12.800	
FEH : 2 years: +0 %: 360 mins: Winter		12.800	
FEH : 100 years: +40 %: 360 mins: Summer		12.800	
FEH : 100 years: +40 %: 360 mins: Winter		12.800	
FEH : 30 years: +35 %: 360 mins: Summer		12.800	
FEH : 30 years: +35 %: 360 mins: Winter		12.800	
FEH : 2 years: +0 %: 480 mins: Summer		12.800	
FEH : 2 years: +0 %: 480 mins: Winter		12.800	
FEH : 100 years: +40 %: 480 mins: Summer		12.800	
FEH : 100 years: +40 %: 480 mins: Winter		12.800	
FEH : 30 years: +35 %: 480 mins: Summer		12.800	
FEH : 30 years: +35 %: 480 mins: Winter		12.800	
FEH : 2 years: +0 %: 600 mins: Summer		12.800	
FEH : 2 years: +0 %: 600 mins: Winter		12.800	
FEH : 100 years: +40 %: 600 mins: Summer		12.800	
FEH : 100 years: +40 %: 600 mins: Winter		12.800	
FEH : 30 years: +35 %: 600 mins: Summer		12.800	
FEH : 30 years: +35 %: 600 mins: Winter		12.800	
FEH : 2 years: +0 %: 720 mins: Summer		12.800	
FEH : 2 years: +0 %: 720 mins: Winter		12.800	
FEH : 100 years: +40 %: 720 mins: Summer		12.800	
FEH : 100 years: +40 %: 720 mins: Winter		12.800	
FEH : 30 years: +35 %: 720 mins: Summer		12.800	
FEH : 30 years: +35 %: 720 mins: Winter		12.800	
FEH : 2 years: +0 %: 960 mins: Summer		12.800	
FEH : 2 years: +0 %: 960 mins: Winter		12.800	
FEH : 100 years: +40 %: 960 mins: Summer		12.800	

North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by:	Checked by:	Approved By:	
	MR	BL	BL	
Report Details: Type: Outfall Details Storm Phase: Phase (1)	Company Address:			

FEH : 100 years: +40 %: 960 mins: Winter		12.800	
FEH : 30 years: +35 %: 960 mins: Summer		12.800	
FEH : 30 years: +35 %: 960 mins: Winter		12.800	
FEH : 2 years: +0 %: 1440 mins: Summer		12.800	
FEH : 2 years: +0 %: 1440 mins: Winter		12.800	
FEH : 100 years: +40 %: 1440 mins: Summer		12.800	
FEH : 100 years: +40 %: 1440 mins: Winter		12.800	
FEH : 30 years: +35 %: 1440 mins: Summer		12.800	
FEH : 30 years: +35 %: 1440 mins: Winter		12.800	

North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by: MR	Checked by: BL	Approved By: BL	
Report Title: Rainfall Analysis Criteria	Company Address:			

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Shortest
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall		
FEH		Type: FEH
Site Location	GB 542381 260322 TL 42381 60322	
Rainfall Version	2013	
Data Type	Point	
Summer	☒	
Winter	☒	

Return Period

Return Period (years)	Increase Rainfall (%)
2.0	0.000
100.0	40.000
30.0	35.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Inflows Summary Storm Phase: Phase (1)	Company Address:		



FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
B2/2+C2/2	FEH: 2 years: +0 %: 15 mins: Summer	-	5.6	10.080
F3	FEH: 2 years: +0 %: 15 mins: Summer	-	1.5	2.646
F-2	FEH: 2 years: +0 %: 15 mins: Summer	-	0.9	1.620
F1/3+ F2/2	FEH: 2 years: +0 %: 15 mins: Summer	-	2.7	4.842
F1 2/3 + G/3	FEH: 2 years: +0 %: 15 mins: Summer	-	4.4	7.848
G/3	FEH: 2 years: +0 %: 15 mins: Summer	-	0.7	1.206
Road 1	FEH: 2 years: +0 %: 15 mins: Winter	0.57	96.3	44.541
Road 2	FEH: 2 years: +0 %: 15 mins: Winter	0.54	91.7	42.417
Catchment Area (4)	FEH: 2 years: +0 %: 15 mins: Winter	0.09	15.8	7.320
Catchment Area (9)	FEH: 2 years: +0 %: 15 mins: Winter	0.40	68.1	31.506
Catchment Area (10)	FEH: 2 years: +0 %: 15 mins: Winter	0.53	89.9	41.607
Catchment Area (11)	FEH: 2 years: +0 %: 15 mins: Winter	0.79	134.4	62.163
Road 3	FEH: 2 years: +0 %: 15 mins: Winter	0.43	73.6	34.035
Phase 1 - 2	FEH: 2 years: +0 %: 30 mins: Winter	3.80	276.2	376.419
Phase 1 Plot Flow - 2	FEH: 2 years: +0 %: 15 mins: Summer	-	28.1	50.580
Phase 1 - 1	FEH: 2 years: +0 %: 30 mins: Winter	11.40	828.6	1129.266
Phase 1 Plot Flow - 1	FEH: 2 years: +0 %: 15 mins: Summer	-	31.7	57.078
Phase 1 - 3	FEH: 2 years: +0 %: 15 mins: Winter	2.00	174.8	157.395
Phase 1 Plot Flow - 3	FEH: 2 years: +0 %: 15 mins: Summer	-	15.0	27.000
H & J	FEH: 2 years: +0 %: 15 mins: Winter	19.17	1675.3	1508.653

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
	Report Details: Type: Inflows Summary Storm Phase: Phase (1)		
Company Address:			

Catchment Area (11) (2)	FEH: 2 years: +0 %: 15 mins: Winter	0.40	67.4	31.194
Phase 1 Plot Flow - 1 (1)	FEH: 2 years: +0 %: 15 mins: Summer	-	31.7	57.078
Catchment Area (16)	FEH: 2 years: +0 %: 15 mins: Winter	0.45	76.5	35.415
Catchment Area (17)	FEH: 2 years: +0 %: 15 mins: Winter	0.50	85.1	39.348
C1/2+B3/2	FEH: 2 years: +0 %: 15 mins: Summer	-	3.0	5.436
C2/2+D2	FEH: 2 years: +0 %: 15 mins: Summer	-	8.7	15.660
C1/2+D1/2	FEH: 2 years: +0 %: 15 mins: Summer	-	6.0	10.764
D1/2+E1+E2	FEH: 2 years: +0 %: 15 mins: Summer	-	11.9	21.474
F2/2	FEH: 2 years: +0 %: 15 mins: Summer	-	0.8	1.512
B1+B2/2+B3/2	FEH: 2 years: +0 %: 15 mins: Summer	-	4.4	7.956

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Inflows Summary Storm Phase: Phase (1)	Company Address:		



FEH: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
B2/2+C2/2	FEH: 100 years: +40 %: 15 mins: Summer	-	5.6	10.080
F3	FEH: 100 years: +40 %: 15 mins: Summer	-	1.5	2.646
F-2	FEH: 100 years: +40 %: 15 mins: Summer	-	0.9	1.620
F1/3+ F2/2	FEH: 100 years: +40 %: 15 mins: Summer	-	2.7	4.842
F1 2/3 + G/3	FEH: 100 years: +40 %: 15 mins: Summer	-	4.4	7.848
G/3	FEH: 100 years: +40 %: 15 mins: Summer	-	0.7	1.206
Road 1	FEH: 100 years: +40 %: 15 mins: Winter	0.57	420.0	194.298
Road 2	FEH: 100 years: +40 %: 15 mins: Winter	0.54	399.9	185.028
Catchment Area (4)	FEH: 100 years: +40 %: 15 mins: Winter	0.09	69.0	31.935
Catchment Area (9)	FEH: 100 years: +40 %: 15 mins: Winter	0.40	297.0	137.418
Catchment Area (10)	FEH: 100 years: +40 %: 15 mins: Winter	0.53	392.3	181.497
Catchment Area (11)	FEH: 100 years: +40 %: 15 mins: Winter	0.79	586.1	271.152
Road 3	FEH: 100 years: +40 %: 15 mins: Winter	0.43	320.9	148.464
Phase 1 - 2	FEH: 100 years: +40 %: 30 mins: Winter	3.80	1233.2	1680.690
Phase 1 Plot Flow - 2	FEH: 100 years: +40 %: 15 mins: Summer	-	28.1	50.580

North West Cambridge Masterplan:		Date: 14/05/2025			
		Designed by: MR	Checked by: BL		Approved By: BL
Report Details: Type: Inflows Summary Storm Phase: Phase (1)		Company Address:			

Phase 1 - 1	FEH: 100 years: +40 %: 30 mins: Winter	11.40	3699.5	5042.06 8
Phase 1 Plot Flow - 1	FEH: 100 years: +40 %: 15 mins: Summer	-	31.7	57.078
Phase 1 - 3	FEH: 100 years: +40 %: 15 mins: Winter	2.00	762.4	686.567
Phase 1 Plot Flow - 3	FEH: 100 years: +40 %: 15 mins: Summer	-	15.0	27.000
H & J	FEH: 100 years: +40 %: 15 mins: Winter	19.17	7307.6	6580.72 8
Catchment Area (11) (2)	FEH: 100 years: +40 %: 15 mins: Winter	0.40	294.1	136.062
Phase 1 Plot Flow - 1 (1)	FEH: 100 years: +40 %: 15 mins: Summer	-	31.7	57.078
Catchment Area (16)	FEH: 100 years: +40 %: 15 mins: Winter	0.45	333.9	154.476
Catchment Area (17)	FEH: 100 years: +40 %: 15 mins: Winter	0.50	371.0	171.639
C1/2+B3/2	FEH: 100 years: +40 %: 15 mins: Summer	-	3.0	5.436
C2/2+D2	FEH: 100 years: +40 %: 15 mins: Summer	-	8.7	15.660
C1/2+D1/2	FEH: 100 years: +40 %: 15 mins: Summer	-	6.0	10.764
D1/2+E1+E 2	FEH: 100 years: +40 %: 15 mins: Summer	-	11.9	21.474
F2/2	FEH: 100 years: +40 %: 15 mins: Summer	-	0.8	1.512
B1+B2/2+B 3/2	FEH: 100 years: +40 %: 15 mins: Summer	-	4.4	7.956

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Inflows Summary Storm Phase: Phase (1)	Company Address:		



FEH: 30 years: Increase Rainfall (%): +35: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
B2/2+C2/2	FEH: 30 years: +35 %: 15 mins: Summer	-	5.6	10.080
F3	FEH: 30 years: +35 %: 15 mins: Summer	-	1.5	2.646
F-2	FEH: 30 years: +35 %: 15 mins: Summer	-	0.9	1.620
F1/3+ F2/2	FEH: 30 years: +35 %: 15 mins: Summer	-	2.7	4.842
F1 2/3 + G/3	FEH: 30 years: +35 %: 15 mins: Summer	-	4.4	7.848
G/3	FEH: 30 years: +35 %: 15 mins: Summer	-	0.7	1.206
Road 1	FEH: 30 years: +35 %: 15 mins: Winter	0.57	306.4	141.738
Road 2	FEH: 30 years: +35 %: 15 mins: Winter	0.54	291.7	134.973
Catchment Area (4)	FEH: 30 years: +35 %: 15 mins: Winter	0.09	50.3	23.295
Catchment Area (9)	FEH: 30 years: +35 %: 15 mins: Winter	0.40	216.7	100.239
Catchment Area (10)	FEH: 30 years: +35 %: 15 mins: Winter	0.53	286.2	132.399
Catchment Area (11)	FEH: 30 years: +35 %: 15 mins: Winter	0.79	427.5	197.799
Road 3	FEH: 30 years: +35 %: 15 mins: Winter	0.43	234.1	108.306
Phase 1 - 2	FEH: 30 years: +35 %: 30 mins: Winter	3.80	894.5	1219.110
Phase 1 Plot Flow - 2	FEH: 30 years: +35 %: 15 mins: Summer	-	28.1	50.580

North West Cambridge Masterplan:		Date: 14/05/2025			
		Designed by: MR	Checked by: BL		Approved By: BL
Report Details: Type: Inflows Summary Storm Phase: Phase (1)		Company Address:			

Phase 1 - 1	FEH: 30 years: +35 %: 30 mins: Winter	11.40	2683.5	3657.34 1
Phase 1 Plot Flow - 1	FEH: 30 years: +35 %: 15 mins: Summer	-	31.7	57.078
Phase 1 - 3	FEH: 30 years: +35 %: 15 mins: Winter	2.00	556.2	500.833
Phase 1 Plot Flow - 3	FEH: 30 years: +35 %: 15 mins: Summer	-	15.0	27.000
H & J	FEH: 30 years: +35 %: 15 mins: Winter	19.17	5330.7	4800.46 3
Catchment Area (11) (2)	FEH: 30 years: +35 %: 15 mins: Winter	0.40	214.5	99.255
Phase 1 Plot Flow - 1 (1)	FEH: 30 years: +35 %: 15 mins: Summer	-	31.7	57.078
Catchment Area (16)	FEH: 30 years: +35 %: 15 mins: Winter	0.45	243.6	112.686
Catchment Area (17)	FEH: 30 years: +35 %: 15 mins: Winter	0.50	270.6	125.211
C1/2+B3/2	FEH: 30 years: +35 %: 15 mins: Summer	-	3.0	5.436
C2/2+D2	FEH: 30 years: +35 %: 15 mins: Summer	-	8.7	15.660
C1/2+D1/2	FEH: 30 years: +35 %: 15 mins: Summer	-	6.0	10.764
D1/2+E1+E 2	FEH: 30 years: +35 %: 15 mins: Summer	-	11.9	21.474
F2/2	FEH: 30 years: +35 %: 15 mins: Summer	-	0.8	1.512
B1+B2/2+B 3/2	FEH: 30 years: +35 %: 15 mins: Summer	-	4.4	7.956

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Junctions Summary Storm Phase: Phase (1)	Company Address:		





FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Swale A (0)	FEH: 2 years: +0 %: 15 mins: Winter	18.60 0	16.50 0	16.636	0.136	116.5	0.154	0.000	113.5	59.671	OK
Swale A (1)	FEH: 2 years: +0 %: 15 mins: Winter	14.30 0	13.00 0	13.169	0.169	113.5	0.191	0.000	109.0	59.436	OK
Swale B (0)	FEH: 2 years: +0 %: 1440 mins: Winter	22.10 0	19.85 0	19.883	0.033	5.6	0.038	0.000	5.6	967.497	OK
Swale B (1)	FEH: 2 years: +0 %: 1440 mins: Winter	19.30 0	17.00 0	17.044	0.044	5.6	0.050	0.000	5.6	967.119	OK
Swale C (0)	FEH: 2 years: +0 %: 15 mins: Winter	18.60 0	16.80 0	16.928	0.128	100.3	0.145	0.000	97.0	57.020	OK
Swale C(0)	FEH: 2 years: +0 %: 15 mins: Winter	16.50 0	14.00 0	14.118	0.118	97.0	0.134	0.000	94.3	56.741	OK
Swale D (1)	FEH: 2 years: +0 %: 15 mins: Winter	22.80 0	19.20 0	19.245	0.045	8.7	0.051	0.000	8.7	15.219	OK
Swale D (2)	FEH: 2 years: +0 %: 15 mins: Winter	19.30 0	16.90 0	16.970	0.070	8.7	0.080	0.000	8.8	14.322	OK
Swale D (0)	FEH: 2 years: +0 %: 1440 mins: Winter	15.00 0	13.35 0	13.640	0.290	18.5	0.328	0.000	18.3	2656.542	OK
Swale D (4)	FEH: 2 years: +0 %: 15 mins: Winter	17.80 0	16.10 0	16.218	0.118	75.7	0.134	0.000	71.4	47.294	OK
Swale D (3)	FEH: 2 years: +0 %: 15 mins: Winter	18.70 0	16.80 0	16.967	0.167	78.9	0.189	0.000	75.7	47.985	OK
Swale E (0)	FEH: 2 years: +0 %: 15 mins: Winter	19.30 0	16.00 0	16.169	0.169	146.3	0.192	0.000	137.1	83.043	OK
Swale E (1)	FEH: 2 years: +0 %: 15 mins: Winter	15.00 0	13.47 0	13.727	0.257	137.1	0.290	0.000	112.6	80.729	OK
Simple Junction	FEH: 2 years: +0 %: 1440 mins: Winter		12.53 3	12.638	0.105	13.0			13.0	1718.234	OK
Simple Junction (1)	FEH: 2 years: +0 %: 1440 mins: Winter		12.89 1	13.020	0.129	24.5			24.5	3277.702	OK

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Junctions Summary Storm Phase: Phase (1)	Company Address:		





FEH: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Swale A (0)	FEH: 100 years: +40 %: 15 mins: Winter	18.600	16.500	18.601	2.101	493.4	2.975	0.600	445.5	233.691	Flood
Swale A (1)	FEH: 100 years: +40 %: 15 mins: Winter	14.300	13.000	14.300	1.300	445.5	1.753	0.283	429.3	233.869	Flood
Swale B (0)	FEH: 100 years: +40 %: 15 mins: Winter	22.100	19.850	19.883	0.033	5.6	0.038	0.000	5.6	9.897	OK
Swale B (1)	FEH: 100 years: +40 %: 15 mins: Winter	19.300	17.000	17.077	0.077	5.6	0.087	0.000	5.6	9.524	OK
Swale C (0)	FEH: 100 years: +40 %: 15 mins: Winter	18.600	16.800	17.075	0.275	404.7	0.311	0.000	395.6	199.182	OK
Swale C(0)	FEH: 100 years: +40 %: 15 mins: Winter	16.500	14.000	14.603	0.603	395.6	0.682	0.000	307.3	199.407	Surcharged
Swale D (1)	FEH: 100 years: +40 %: 180 mins: Winter	22.800	19.200	19.245	0.045	8.7	0.051	0.000	8.7	187.479	OK
Swale D (2)	FEH: 100 years: +40 %: 15 mins: Winter	19.300	16.900	17.473	0.573	73.5	0.648	0.000	57.6	22.666	Surcharged
Swale D (0)	FEH: 100 years: +40 %: 15 mins: Winter	15.000	13.350	14.242	0.892	239.5	1.008	0.000	231.7	171.158	Surcharged
Swale D (4)	FEH: 100 years: +40 %: 15 mins: Winter	17.800	16.100	16.337	0.237	239.9	0.268	0.000	233.5	161.501	OK
Swale D (3)	FEH: 100 years: +40 %: 15 mins: Winter	18.700	16.800	17.492	0.692	320.9	0.783	0.000	239.9	170.705	Surcharged
Swale E (0)	FEH: 100 years: +40 %: 15 mins: Winter	19.300	16.000	17.662	1.662	598.0	1.880	0.000	583.7	289.376	Surcharged
Swale E (1)	FEH: 100 years: +40 %: 15 mins: Winter	15.000	13.470	15.007	1.537	583.7	8.922	7.192	409.1	289.532	Flood
Simple Junction	FEH: 100 years: +40 %: 240 mins: Winter		12.533	12.643	0.110	14.1			14.1	308.369	OK
Simple Junction (1)	FEH: 100 years: +40 %: 1440 mins: Winter		12.891	13.034	0.143	29.4			29.4	4143.883	OK

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Junctions Summary Storm Phase: Phase (1)	Company Address:		





FEH: 30 years: Increase Rainfall (%): +35: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Swale A (0)	FEH: 30 years: +35 %: 15 mins: Winter	18.600	16.500	16.775	0.275	361.1	0.311	0.000	354.3	172.765	OK
Swale A (1)	FEH: 30 years: +35 %: 15 mins: Winter	14.300	13.000	13.439	0.439	354.3	0.497	0.000	337.6	172.637	Surcharged
Swale B (0)	FEH: 30 years: +35 %: 1440 mins: Winter	22.100	19.850	19.883	0.033	5.6	0.038	0.000	5.6	967.497	OK
Swale B (1)	FEH: 30 years: +35 %: 1440 mins: Winter	19.300	17.000	17.044	0.044	5.6	0.050	0.000	5.6	967.119	OK
Swale C (0)	FEH: 30 years: +35 %: 15 mins: Winter	18.600	16.800	17.036	0.236	300.3	0.266	0.000	292.8	149.594	OK
Swale C(0)	FEH: 30 years: +35 %: 15 mins: Winter	16.500	14.000	14.249	0.249	292.8	0.282	0.000	279.0	149.302	OK
Swale D (1)	FEH: 30 years: +35 %: 120 mins: Winter	22.800	19.200	19.245	0.045	8.7	0.051	0.000	8.7	124.839	OK
Swale D (2)	FEH: 30 years: +35 %: 15 mins: Winter	19.300	16.900	17.144	0.244	23.6	0.276	0.000	23.0	16.700	OK
Swale D (0)	FEH: 30 years: +35 %: 15 mins: Winter	15.000	13.350	13.801	0.451	205.8	0.510	0.000	179.4	130.997	Surcharged
Swale D (4)	FEH: 30 years: +35 %: 15 mins: Winter	17.800	16.100	16.311	0.211	207.8	0.239	0.000	199.8	121.323	OK
Swale D (3)	FEH: 30 years: +35 %: 15 mins: Winter	18.700	16.800	17.148	0.348	234.1	0.394	0.000	207.8	124.661	OK
Swale E (0)	FEH: 30 years: +35 %: 15 mins: Winter	19.300	16.000	16.328	0.328	439.5	0.370	0.000	419.8	217.327	OK
Swale E (1)	FEH: 30 years: +35 %: 15 mins: Winter	15.000	13.470	14.331	0.861	419.8	0.974	0.000	313.9	216.342	Surcharged
Simple Junction	FEH: 30 years: +35 %: 960 mins: Winter		12.533	12.643	0.110	14.1			14.1	1294.198	OK
Simple Junction (1)	FEH: 30 years: +35 %: 1440 mins: Winter		12.891	13.027	0.136	26.7			26.7	3816.156	OK

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase (1)	Company Address:		





FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Outflow

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residant Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
Swale H2 - Ex	FEH: 2 years: +0 %: 30 mins: Winter	14.492	13.612	0.216	0.312	305.1	42.397	0.000	0.000	301.9	478.892	2	96.310
Swale G - Ex	FEH: 2 years: +0 %: 15 mins: Winter	20.779	17.714	0.109	0.114	277.7	70.803	0.000	0.000	256.3	215.053	8	65.793
Tank (1)	FEH: 2 years: +0 %: 1440 mins: Winter	13.770	13.770	0.495	0.495	267.3	6191.687	0.000	0.000	171.6	20496.701	440	69.042
Swale I - Ex	FEH: 2 years: +0 %: 30 mins: Winter	15.045	14.701	0.550	0.401	860.9	295.591	0.000	0.000	816.9	1271.618	5	77.673
Swale H - Ex	FEH: 2 years: +0 %: 30 mins: Winter	17.181	15.640	0.188	0.148	305.1	31.284	0.000	0.000	300.8	474.409	1	97.163
Swale I -2	FEH: 2 years: +0 %: 15 mins: Winter	15.100	15.022	0.080	0.222	92.0	57.804	0.000	0.000	95.2	48.673	25	94.063
Tank (3)	FEH: 2 years: +0 %: 15 mins: Summer	14.865	14.865	0.065	0.065	1507.2	1364.902	0.000	0.000	0.0	0.000		93.500
Swale F - Ex	FEH: 2 years: +0 %: 60 mins: Summer	21.602	21.320	0.190	0.520	190.2	54.619	0.000	0.000	157.4	369.615	3	96.522
Detention Basin 1	FEH: 2 years: +0 %: 1440 mins: Winter	13.000	13.000	0.287	0.287	27.4	1023.031	0.000	0.000	13.0	1718.447	975	52.411
Detention Basin 2	FEH: 2 years: +0 %: 1440 mins: Winter	13.638	13.638	0.438	0.438	41.5	1815.254	0.000	0.000	24.5	3278.668	762	33.863

North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by: MR	Checked by: BL	Approved By: BL	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase (1)	Company Address:			

Status
OK
OK
OK
OK
OK
OK
OK
OK
OK
OK

North West Cambridge Masterplan:		Date: 14/05/2025			
		Designed by: MR	Checked by: BL		Approved By: BL
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase (1)		Company Address:			



FEH: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By:
Max. Outflow

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
Swale H2 - Ex	FEH: 100 years: +40 %: 15 mins: Winter	14.683	13.988	0.407	0.688	1120.4	131.015	0.000	0.000	1318.2	1237.373	2	88.596
Swale G - Ex	FEH: 100 years: +40 %: 15 mins: Winter	20.846	17.791	0.176	0.191	861.6	158.558	0.000	0.000	685.3	554.208	6	23.395
Tank (1)	FEH: 100 years: +40 %: 360 mins: Winter	14.548	14.548	1.273	1.273	1927.7	15915.044	0.000	0.000	241.5	8180.145	624	20.425
Swale I - Ex	FEH: 100 years: +40 %: 30 mins: Winter	15.568	15.466	1.073	1.166	3731.9	1052.369	0.000	0.000	2677.7	5581.287	5	20.512
Swale H - Ex	FEH: 100 years: +40 %: 30 mins: Winter	17.365	15.840	0.371	0.348	1262.1	91.697	0.000	0.000	1247.0	1778.806	1	91.685
Swale I -2	FEH: 100 years: +40 %: 15 mins: Winter	15.493	15.488	0.473	0.688	531.9	418.453	0.000	0.000	673.8	142.882	40	57.019
Tank (3)	FEH: 100 years: +40 %: 720 mins: Summer	15.600	15.600	0.800	0.800	1542.1	16808.385	0.000	0.000	35.6	2132.586	7559	19.960
Swale F - Ex	FEH: 100 years: +40 %: 60 mins: Winter	22.553	22.553	1.141	1.753	777.3	743.475	0.000	0.000	232.0	1287.263	42	52.661
Detention Basin 1	FEH: 100 years: +40 %: 240 mins: Winter	13.113	13.114	0.400	0.401	250.5	1442.528	0.000	0.000	14.1	308.601	1265	32.897
Detention Basin 2	FEH: 100 years: +40 %: 1440 mins: Winter	13.790	13.790	0.590	0.590	80.5	2478.937	0.000	0.000	29.4	4144.935	863	9.682

North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by:	Checked by:	Approved By:	
	MR	BL	BL	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase (1)	Company Address:			

Status
OK
Flood Risk
OK
OK
OK
OK
OK
OK
OK
OK

North West Cambridge Masterplan:		Date: 14/05/2025			
		Designed by: MR	Checked by: BL		Approved By: BL
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase (1)		Company Address:			



FEH: 30 years: Increase Rainfall (%): +35: Critical Storm Per Item: Rank By: Max. Outflow

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
Swale H2 - Ex	FEH: 30 years: +35 %: 15 mins: Winter	14.629	13.894	0.353	0.594	826.3	100.516	0.000	0.000	949.9	911.108	3	91.251
Swale G - Ex	FEH: 30 years: +35 %: 15 mins: Winter	20.828	17.768	0.158	0.168	659.8	127.403	0.000	0.000	538.3	443.964	6	38.447
Tank (1)	FEH: 30 years: +35 %: 960 mins: Winter	14.263	14.263	0.988	0.988	707.1	12346.783	0.000	0.000	219.5	20119.092	539	38.266
Swale I - Ex	FEH: 30 years: +35 %: 30 mins: Winter	15.390	15.113	0.895	0.813	2715.8	684.405	0.000	0.000	2298.2	4022.005	4	48.305
Swale H - Ex	FEH: 30 years: +35 %: 30 mins: Winter	17.315	15.777	0.321	0.285	923.4	71.759	0.000	0.000	912.0	1317.181	1	93.493
Swale I -2	FEH: 30 years: +35 %: 15 mins: Winter	15.351	15.342	0.331	0.542	365.4	273.811	0.000	0.000	457.8	123.345	38	71.875
Tank (3)	FEH: 30 years: +35 %: 1440 mins: Winter	15.480	15.480	0.680	0.680	435.0	14289.973	0.000	0.000	29.5	3131.687	8079	31.953
Swale F - Ex	FEH: 30 years: +35 %: 60 mins: Winter	22.216	22.216	0.804	1.416	564.0	466.110	0.000	0.000	206.6	1046.517	29	70.321
Detention Basin 1	FEH: 30 years: +35 %: 960 mins: Winter	13.122	13.122	0.409	0.409	66.2	1474.788	0.000	0.000	14.1	1294.429	1088	31.397
Detention Basin 2	FEH: 30 years: +35 %: 1440 mins: Winter	13.704	13.704	0.504	0.504	65.4	2101.901	0.000	0.000	26.7	3817.173	802	23.419

North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by:	Checked by:	Approved By:	
Report Details:	MR	BL	BL	
Type: Stormwater Controls Summary Storm Phase: Phase (1)	Company Address:			

Status
OK
OK
OK
OK
OK
OK
OK
OK
OK
OK

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Connections Summary Storm Phase: Phase (1)	Company Address:		





FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe (5)	FEH: 2 years: +0 %: 30 mins: Winter	Pipe	Swale H - Ex	Swale H2 - Ex	18.519	15.672	0.170	474.409	3.4	0.04	300.8	OK
Pipe (11)	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	Tank (3)	Swale I - 2	15.800	14.865	0.112	18.869	0.0	0	0.0	OK
Pipe (4)	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale I - 2	Swale I - Ex	16.020	14.934	0.373	0.000	0.6	0.04	95.2	OK
Pipe (9)	FEH: 2 years: +0 %: 60 mins: Summer	Pipe	Swale F - Ex	Swale G - Ex	23.000	21.085	0.300	369.615	2.4	1.74	157.4	OK
Pipe (2)	FEH: 2 years: +0 %: 30 mins: Winter	Pipe	Swale I - Ex	Tank (1)	15.780	14.802	0.389	1240.683	2.9	0.3	816.9	OK
Pipe (7)	FEH: 2 years: +0 %: 30 mins: Winter	Pipe	Swale H2 - Ex	Tank (1)	15.976	13.535	0.199	478.892	3.1	0.45	301.9	OK
Pipe (6)	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale G - Ex	Tank (1)	17.800	17.704	0.113	215.053	5.2	0.03	256.3	OK
Pipe3.3	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale D (0)	Detention Basin 2	15.000	13.557	0.135	56.686	2.0	0.58	70.5	OK
Pipe1.0	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale A (0)	Swale A (1)	18.600	16.636	0.152	59.671	2.7	0.28	113.5	OK
Pipe1.1	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale A (1)	Detention Basin 1	14.300	13.169	0.126	59.436	3.3	0.31	109.0	OK
Pipe2.0	FEH: 2 years: +0 %: 30 mins: Summer	Pipe	Swale B (0)	Swale B (1)	22.100	19.883	0.039	19.977	1.1	0.03	5.6	OK
Pipe2.1	FEH: 2 years: +0 %: 30 mins: Summer	Pipe	Swale B (1)	Swale C (0)	19.300	17.044	0.073	19.597	0.9	0.04	5.6	OK
Pipe2.2	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale C (0)	Swale C (0)	18.600	16.928	0.123	57.020	2.7	0.17	97.0	OK
Pipe2.3	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale C (0)	Detention Basin 1	16.500	14.118	0.101	56.741	4.9	0.26	94.3	OK
Pipe3.0	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale D (1)	Swale D (2)	22.800	19.245	0.058	15.219	1.0	0.03	8.7	OK
Pipe3.3	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale D (4)	Swale D (0)	17.800	16.218	0.162	47.294	1.6	0.22	71.4	OK
Pipe3.1	FEH: 2 years: +0 %: 60 mins: Winter	Pipe	Swale D (2)	Swale D (3)	19.300	16.960	0.088	61.310	0.8	0.05	8.9	OK
Pipe3.2	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale D (3)	Swale D (4)	18.700	16.967	0.143	47.985	2.0	0.36	75.7	OK
Pipe4.0	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale E (0)	Swale E (1)	19.300	16.169	0.213	83.043	1.7	0.23	137.1	OK

North West Cambridge Masterplan:	Date: 14/05/2025			
	Designed by: MR	Checked by: BL	Approved By: BL	
Report Details: Type: Connections Summary Storm Phase: Phase (1)	Company Address:			

Pipe4.1	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	Swale E (1)	Detentio n Basin 2	15.000	13.727	0.160	80.729	2.2	0.55	112.6	OK
Pipe	FEH: 2 years: +0 %: 1440 mins: Winter	Pipe	Detentio n Basin 1	Simple Junction	13.300	13.000	0.112	1718.234	0.9	0.9	13.0	Surch arged
Pipe (1)	FEH: 2 years: +0 %: 1440 mins: Winter	Pipe	Detentio n Basin 2	Simple Junction (1)	13.850	13.638	0.132	3277.702	1.0	0.64	24.5	Surch arged

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Connections Summary Storm Phase: Phase (1)	Company Address:		





FEH: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe (5)	FEH: 100 years: +40 %: 30 mins: Winter	Pipe	Swale H - Ex	Swale H2 - Ex	18.519	15.858	0.376	1778.806	4.6	0.17	1247.0	OK
Pipe (11)	FEH: 100 years: +40 %: 1440 mins: Winter	Pipe	Tank (3)	Swale I - 2	15.800	15.748	0.229	346.030	0.5	0.34	35.6	Surcharged
Pipe (4)	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale I - 2	Swale I - Ex	16.020	15.381	0.837	0.000	1.2	0.25	673.8	OK
Pipe (9)	FEH: 100 years: +40 %: 60 mins: Winter	Pipe	Swale F - Ex	Swale G - Ex	23.000	22.247	0.300	1287.263	3.3	2.56	232.0	Surcharged
Pipe (2)	FEH: 100 years: +40 %: 30 mins: Winter	Pipe	Swale I - Ex	Tank (1)	15.780	15.414	0.985	5073.355	3.6	1	2677.7	Surcharged
Pipe (7)	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale H2 - Ex	Tank (1)	15.976	13.782	0.475	1237.373	4.5	1.96	1318.2	OK
Pipe (6)	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale G - Ex	Tank (1)	17.800	17.764	0.223	554.208	6.8	0.08	685.3	Flood Risk
Pipe3.3	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale D (0)	Detention Basin 2	15.000	14.242	0.375	171.158	2.2	1.89	231.7	Surcharged
Pipe1.0	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale A (0)	Swale A (1)	18.600	18.601	0.375	233.691	4.0	1.11	445.5	Flood
Pipe1.1	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale A (1)	Detention Basin 1	14.300	14.300	0.375	233.869	4.0	1.24	429.3	Flood
Pipe2.0	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	Swale B (0)	Swale B (1)	22.100	19.883	0.052	9.897	1.1	0.03	5.6	OK
Pipe2.1	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	Swale B (1)	Swale C (0)	19.300	17.070	0.168	9.512	0.9	0.04	5.6	OK
Pipe2.2	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale C (0)	Swale C (0)	18.600	17.075	0.439	199.170	3.0	0.69	395.6	OK
Pipe2.3	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale C (0)	Detention Basin 1	16.500	14.603	0.300	199.407	5.4	0.84	307.3	Surcharged

North West Cambridge Masterplan:		Date: 14/05/2025		
		Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Connections Summary Storm Phase: Phase (1)		Company Address:		



Pipe3.0	FEH: 100 years: +40 %: 30 mins: Summer	Pipe	Swale D (1)	Swale D (2)	22.800	19.245	0.139	30.881	1.0	0.03	8.8	OK
Pipe3.3	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale D (4)	Swale D (0)	17.800	16.337	0.375	161.501	2.1	0.71	233.5	OK
Pipe3.1	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale D (2)	Swale D (3)	19.300	17.473	0.375	14.381	0.8	0.35	57.6	Surcharged
Pipe3.2	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale D (3)	Swale D (4)	18.700	17.492	0.375	162.420	2.4	1.14	239.9	Surcharged
Pipe4.0	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale E (0)	Swale E (1)	19.300	17.662	0.525	289.376	2.7	0.97	583.7	Surcharged
Pipe4.1	FEH: 100 years: +40 %: 15 mins: Winter	Pipe	Swale E (1)	Detention Basin 2	15.000	15.007	0.450	289.532	2.6	2.02	409.1	Flood
Pipe	FEH: 100 years: +40 %: 240 mins: Winter	Pipe	Detention Basin 1	Simple Junction	13.300	13.113	0.120	308.369	0.9	0.98	14.1	Surcharged
Pipe (1)	FEH: 100 years: +40 %: 1440 mins: Winter	Pipe	Detention Basin 2	Simple Junction (1)	13.850	13.790	0.148	4143.883	1.1	0.76	29.4	Surcharged

North West Cambridge Masterplan:	Date: 14/05/2025		
	Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Connections Summary Storm Phase: Phase (1)	Company Address:		





FEH: 30 years: Increase Rainfall (%): +35: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe (5)	FEH: 30 years: +35 %: 30 mins: Winter	Pipe	Swale H - Ex	Swale H2 - Ex	18.519	15.806	0.316	1317.181	4.3	0.13	912.0	OK
Pipe (11)	FEH: 30 years: +35 %: 1440 mins: Winter	Pipe	Tank (3)	Swale I - 2	15.800	15.480	0.218	393.531	0.4	0.28	29.5	Surcharged
Pipe (4)	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale I - 2	Swale I - Ex	16.020	15.237	0.691	0.000	1.1	0.17	457.8	OK
Pipe (9)	FEH: 30 years: +35 %: 60 mins: Winter	Pipe	Swale F - Ex	Swale G - Ex	23.000	21.910	0.300	1046.517	2.9	2.28	206.6	Surcharged
Pipe (2)	FEH: 30 years: +35 %: 30 mins: Winter	Pipe	Swale I - Ex	Tank (1)	15.780	15.160	0.761	3723.410	3.6	0.85	2298.2	OK
Pipe (7)	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale H2 - Ex	Tank (1)	15.976	13.708	0.385	911.108	4.3	1.41	949.9	OK
Pipe (6)	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale G - Ex	Tank (1)	17.800	17.745	0.177	443.964	6.4	0.06	538.3	OK
Pipe3.3	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale D (0)	Detention Basin 2	15.000	13.801	0.300	130.997	2.1	1.46	179.4	Surcharged
Pipe1.0	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale A (0)	Swale A (1)	18.600	16.775	0.357	172.765	3.3	0.88	354.3	OK
Pipe1.1	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale A (1)	Detention Basin 1	14.300	13.439	0.318	172.637	3.9	0.97	337.6	Surcharged
Pipe2.0	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale B (0)	Swale B (1)	22.100	19.883	0.039	9.897	1.1	0.03	5.6	OK
Pipe2.1	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale B (1)	Swale C (0)	19.300	17.044	0.138	9.513	0.9	0.04	5.6	OK
Pipe2.2	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale C (0)	Swale C (0)	18.600	17.036	0.242	149.594	3.4	0.51	292.8	OK
Pipe2.3	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale C (0)	Detention Basin 1	16.500	14.249	0.223	149.302	5.3	0.76	279.0	OK

North West Cambridge Masterplan:		Date: 14/05/2025		
		Designed by: MR	Checked by: BL	Approved By: BL
Report Details: Type: Connections Summary Storm Phase: Phase (1)		Company Address:		



Pipe3.0	FEH: 30 years: +35 %: 30 mins: Summer	Pipe	Swale D (1)	Swale D (2)	22.800	19.245	0.100	30.880	1.0	0.03	8.9	OK
Pipe3.3	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale D (4)	Swale D (0)	17.800	16.311	0.331	121.323	1.9	0.61	199.8	OK
Pipe3.1	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale D (2)	Swale D (3)	19.300	17.144	0.296	14.310	0.8	0.14	23.0	OK
Pipe3.2	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale D (3)	Swale D (4)	18.700	17.148	0.280	122.271	2.4	0.98	207.8	OK
Pipe4.0	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale E (0)	Swale E (1)	19.300	16.328	0.525	217.327	1.9	0.69	419.8	OK
Pipe4.1	FEH: 30 years: +35 %: 15 mins: Winter	Pipe	Swale E (1)	Detention Basin 2	15.000	14.331	0.450	216.342	2.2	1.55	313.9	Surcharged
Pipe	FEH: 30 years: +35 %: 960 mins: Winter	Pipe	Detention Basin 1	Simple Junction	13.300	13.122	0.120	1294.198	0.9	0.98	14.1	Surcharged
Pipe (1)	FEH: 30 years: +35 %: 1440 mins: Winter	Pipe	Detention Basin 2	Simple Junction (1)	13.850	13.704	0.140	3816.156	1.0	0.69	26.7	Surcharged

Appendix L SUDS PROFORMA

Appendix F Surface water drainage pro-forma

Applicants should complete this form and submit it to the LPA, referencing from where in their submission documents this information is taken. The proforma is supported by the [DEFRA/ EA guidance on Rainfall Runoff Management](#), and uses the storage calculator on www.UKsuds.com. The proforma should be considered alongside other supporting SuDS Guidance, but focuses on ensuring flood risk is not made worse elsewhere. This proforma is based upon current industry standard practice.

1. Site details

Site	North West Cambridge Masterplan
Address & post code or LPA reference	Land Between Huntingdon Road, Madingley Road and M11, Eddington, North West Cambridge, Cambridgeshire
Grid Reference	OS X (Eastings): 542265 ; OS Y (Northings): 260661
Is the existing site developed or Greenfield?	The Site is predominantly greenfield
Total Site Area served by drainage system (excluding open space) (Ha)⁽¹⁾	56.75 ha

1. The Greenfield runoff off rate from the development which is to be used for assessing the requirements for limiting discharge flow rates and attenuation storage from a site should be calculated for the area that forms the drainage network for the site whatever size of site and type of drainage technique. Please refer to the Rainfall Runoff Management document or CIRIA manual for detail on this.

2. Impermeable area

	Existing	Proposed	Difference (Proposed-Existing)	Notes for developers and Local Authorities
Impermeable area (ha)	7.1 ha	39.6 ha	32.5 ha	If proposed > existing, then runoff rates and volumes will be increasing. Section 6 must be filled in. If proposed ≤ existing, then section 6 can be skipped & section 7 filled in.
Drainage Method (infiltration/sewer/watercourse)	Infiltration + Water- course	Water- course	N/A	If different from the existing, please fill in section 3. If existing drainage is by infiltration and the proposed is not, discharge volumes may increase. Fill in section 6.

3. Proposing to discharge surface water via

	Yes	No	Evidence that this is possible	Notes for developers and Local Authorities
Infiltration		X		e.g. soakage tests. Section 6 (infiltration) must be filled in if infiltration is proposed.
To watercourse	X			e.g. Is there a watercourse nearby?
To surface water sewer		X		Confirmation from sewer provider that sufficient capacity exists for this connection.
Combination of above		X		e.g. part infiltration part discharge to sewer or watercourse. Provide evidence above.

4. Peak Discharge Rates⁽¹⁾ **VALUES ADDED ARE L/S/HA**

	Existing rates (l/s)	Proposed rates (l/s)	Difference (l/s) (Proposed-Existing)	Notes for developers and Local Authorities
Greenfield QBAR	1.98	N/A	N/A	QBAR is approx. 1 in 2 storm event. Provide this if Section 6 (QBAR) is proposed.
1 in 1	1.73	2	0.27	Proposed discharge rates (with mitigation) should be no greater than existing rates for all corresponding storm events. e.g. discharging all flow from site at the existing 1 in 100 event increases flood risk during smaller events.
1 in 30	7.08	2	-5.08	
1 in 100	8.38	2	-6.38	
1 in 100 + climate change	N/A	2	N/A	To mitigate for climate change the proposed 1 in 100 +CC must be no greater than the existing 1 in 100 runoff rate. If not, flood risk increases under climate change. 30% should be added to the peak rainfall intensity.

1. This is the maximum flow rate at which storm water runoff leaves the site during a particular storm event.

The surface water runoff is proposed to discharge at 2 l/s/ha for the whole development site in order to control the proposed runoff volume

5. Calculate additional volumes for storage⁽¹⁾ in accordance with Ciria C753 Manual

	Existing volume (m ³)	Proposed volume (m ³)	Difference (m ³) (Proposed-Existing)	Notes for developers and Local Authorities
1 in 1				Proposed discharge volumes (without mitigation) should be no greater than existing volumes for all corresponding storm events. Any increase in volume increases flood risk elsewhere. Where volumes are increased section 6 must be filled in.
1 in 30				
1 in 100				
1 in 100 + climate change				To mitigate for climate change the volume discharge from site must be no greater than the existing 1 in 100 storm event. If not, flood risk increases under climate change.

- The total volume of water leaving the development site. New hard surfaces potentially restrict the amount of storm water that can go to the ground, so this needs to be controlled so not to make flood risk worse to properties downstream.

6. Calculate attenuation storage⁽¹⁾

		Notes for developers and Local Authorities
Storage Attenuation volume (Flow rate control) required to retain rates as existing (m³)	Refer to section 6 Surface Water Drainage Strategy and to Appendix J for the Drainage Strategy in the report.	

- Attenuation storage is provided to enable the rate of runoff from the site into the receiving watercourse to be limited to an acceptable rate to protect against erosion and flooding downstream. The attenuation storage volume is a function of the degree of development relative to the greenfield discharge rate.

7. How is Storm Water stored on site?⁽¹⁾

			Notes for developers and Local Authorities
Infiltration	State the Site's Geology and known Source Protection Zones (SPZ)	No infiltration into the ground. BGS bedrock Mudstone and Chalk. Site does not lie in SPZ area	Avoid infiltrating in made ground. Infiltration rates are highly variable and refer to Environment Agency website to identify and source protection zones (SPZ)
	Are infiltration rates suitable?	N/A	Infiltration rates should be no lower than 1×10^{-6} m/s.
	State the distance between a proposed infiltration device base and the ground water (GW) level	N/A	Need 1m (min) between the base of the infiltration device & the water table to protect Groundwater quality & ensure GW doesn't enter infiltration devices. Avoid infiltration where this isn't possible.
	Were infiltration rates obtained by desk study or infiltration test?	N/A	Infiltration rates can be estimated from desk studies at most stages of the planning system if a backup attenuation scheme is provided.
	Is the site contaminated? If yes, consider advice from others on whether infiltration can happen.	N/A	Water should not be infiltrated through land that is contaminated. The Environment Agency may provide bespoke advice in planning consultations for contaminated sites that should be considered.
In light of the above, is infiltration feasible?	Yes/No? If the answer is No, please identify how the storm water will be stored prior to release	No. Discharge to a water body	If infiltration is not feasible how will the additional volume be stored? The applicant should then consider the following options in the next section.

1. Storage is required for the additional volume from site but also for holding back water to slow down the rate from the site. This is known as attenuation storage and long term storage. The idea is that the additional volume does not get into the watercourses, or if it does it is at an exceptionally low rate. You can either infiltrate the stored water back to ground, or if this isn't possible hold it back with on-site storage. Firstly, can infiltration work on site?

Storage requirements

The developer must confirm that either of the two methods for dealing with the amount of water that needs to be stored on site.

- **Option 1 Simple:**
Store both the additional volume and attenuation volume in order to make a final discharge from site at QBAR (Mean annual flow rate). This is preferred if no infiltration can be made on site. This very simply satisfies the runoff rates and volume criteria.
- **Option 2 Complex:**
If some of the additional volume of water can be infiltrated back into the ground, the remainder can be discharged at a very low rate of 2 l/sec/hectare. A combined storage calculation using the partial permissible rate of 2 l/sec/hectare and the attenuation rate used to slow the runoff from site.

All run-off is restricted to 2l/s/ha which is equivalent to Qbar.		Notes for developers and Local Authorities
Please confirm what option has been chosen and how much storage is required on site.		The developer at this stage should have an idea of the site characteristics and be able to explain what the storage requirements are on site and how it will be achieved.

8. Please confirm

		Notes for developers and Local Authorities
Which SuDS measures have been used?		SuDS can be adapted for most situations even where infiltration isn't feasible e.g. impermeable liners beneath some SUDS devices allows treatment but not infiltration. See CIRIA SUDS Manual C697.
Drainage system can contain in the 1 in 30 storm event without flooding	Yes	This a requirement for sewers for adoption & is good practice even where drainage system is not adopted.
Any flooding between the 1 in 30 & 1 in 100 plus climate change storm events will be safely contained on site.	Yes	Safely: not causing property flooding or posing a hazard to site users i.e. no deeper than 300mm on roads/footpaths. Flood waters must drain away at section 6 rates. Existing rates can be used where runoff volumes are not increased.
How are rates being restricted (hydrobrake etc)	Hydro brake	Hydrobrakes to be used where rates are between 2l/s to 5l/s. Orifices may not work below 5l/s as the pipes may block. Pipes with flows < 2l/s are prone to blockage but this can be overcome with careful product selection and SuDS design.

Refer to section 6 Surface Water Drainage Strategy and to Appendix J for the Drainage Strategy in the report.

Adoption strategy of the SuDS will be developed in the detail design post Outline Planning Application.

		Notes for developers and Local Authorities
Please confirm the owners/adopters of the SuDS throughout the development. Please list all the owners.		If these are multiple owners then a drawing illustrating exactly what features will be within each owner's remit must be submitted with this Proforma.
How are the entire SuDS to be maintained?	Maintenance plan for SuDS will be developed in the detail design post Outline Planning Application and is expected to follow best practice.	If the features are to be maintained directly by the owners as stated in answer to the above question please answer yes to this question and submit the relevant maintenance schedule for each feature. If it is to be maintained by others than above please give details of each feature and the maintenance schedule. Clear details of the maintenance proposals of all element of the proposed drainage system must be provided. Poorly maintained drainage can lead to increased flooding problems in the future.

9. Evidence

Pro-forma Section	Document reference where details quoted above are taken from:	Page Number
2		
3		
4		
5		
6		
7		

The above form should be completed using evidence from the Flood Risk Assessment where applicable, surface water drainage strategy and site plans. It should serve as a summary sheet of the drainage proposals and should clearly show that the proposed rate and volume as a result of development will not be increasing. If there is an increase in rate or volume, the rate or volume section should be completed to set out how the additional rate/volume is being dealt with.

This form is completed using factual information from the Flood Risk Assessment and Site Plans and can be used as a summary of the surface water drainage strategy on this site.

Form completed by:	Maja Raicevic
Qualification of person responsible for signing off this pro-forma:	Civil Engineer
Company:	AECOM
On behalf of (Client's details):	The University of Cambridge
Date:	15.05.2025.

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