MILL POND - Rating Curve Calculations

EXISTING MILL POND GRADING

Elevation (m)	Area (m^2)	Avg. Area (m^2)	Depth (m)	Volume (m^3)	Cumulat. (m^3)	Active (m^3)	
232.90	**21,200**						NWL
		21650	1.10	23,815	23,815	23,815	
234.00	**22,100**						Mill St Overtopping
		22275	0.50	11,138	34,952	11,138	
234.50	22,450						

Pond area at NWL (232.9m) measured from CAD survey at 21,200m2
Conservatively assume 1:1 side slopes to determine pond area at 234.0m (offset NWL measurement by 1.1m)…
...Results in pond area at 234.0m of 22,100m2

EXISTING Outlet Configuration

	Orifice	Weir	
Orifice dia (mm)/Weir Length (m):	-	7.400	
Invert Elevation:	-	232.90	
Orifice/Weir Flow Coefficient:	-	1.84	

Description	Elevation (m)	Depth to PP (m)	Active Storage (m3)	Controlled Flow (m3/s)				
				Orifice*	Weir**	D/S Culvert	Spill	Total
NWL	**232.90**	0.000	**0**	0.000	0.000		0.000	0.000
	233.00	0.100	2,165	0.000	1.362		0.000	1.362
	233.10	0.200	4,330	0.000	2.723		0.000	2.723
	233.20	0.300	6,495	0.000	4.085		0.000	4.085
	233.30	0.400	8,660	0.000	5.446		0.000	5.446
	233.40	0.500	10,825	0.000	6.808		0.000	6.808
	233.50	0.600	12,990	0.000	8.170		0.000	8.170
	233.60	0.700	15,155	0.000	9.531		0.000	9.531
	233.70	0.800	17,320	0.000	10.893		0.000	10.893
	233.80	0.900	19,485	0.000	12.254		0.000	12.254
	233.90	1.000	21,650	0.000	13.616		0.000	13.616
Mill St Overtopping	234.00	1.100	23,815	0.000	14.978	15.600	0.000	14.978
	234.10	1.200	26,045	0.000	16.339	16.560	3.000	19.339
	234.20	1.300	28,275	0.000	17.701	16.800	6.200	23.000
	234.30	1.400	30,505	0.000	19.062	17.040	13.000	30.040

* Orifice Equation: $Q = 0.63*A*(2gh)^{1/2}$

** Weir Equation: Q = C*L*H

Active storage volumes determined based on "average volume per m depth" (from pond grading above)

MILL POND - Rating Curve Calculations

PROPOSED Outlet Configuration

	Orifice	Weir	
Orifice dia (mm)/Weir Length (m):	300	7.400	
Invert Elevation:	232.75	233.05	
Orifice/Weir Flow Coefficient:	0.630	1.84	

Description	Elevation (m)	Depth to PP (m)	Active Storage (m3)	Controlled Flow (m3/s)				
				Orifice*	Weir**	D/S Culvert	Spill	Total
NWL	**232.75**	0.000	**0**	0.000	0.000		0.000	0.000
	232.85	0.100	2,165	0.000	0.000		0.000	0.000
	232.95	0.200	4,330	0.044	0.000		0.000	0.044
	233.05	0.300	6,495	0.076	0.000		0.000	0.076
	233.15	0.400	8,660	0.099	1.362		0.000	1.460
	233.25	0.500	10,825	0.117	2.723		0.000	2.840
	233.35	0.600	12,990	0.132	4.085		0.000	4.217
	233.45	0.700	15,155	0.146	5.446		0.000	5.593
	233.55	0.800	17,320	0.159	6.808		0.000	6.967
	233.65	0.900	19,485	0.171	8.170		0.000	8.340
	233.75	1.000	21,650	0.182	9.531		0.000	9.713
	233.85	1.100	23,815	0.192	10.893		0.000	11.085
	233.95	1.200	25,980	0.202	12.254		0.000	12.457
Mill St Overtopping	234.00	1.250	27,063	0.207	12.935	15.600	0.000	13.142
	234.10	1.350	29,293	0.216	14.297	16.560	3.000	17.513
	234.20	1.450	31,523	0.225	15.658	16.800	6.200	22.083
	234.30	1.550	33,753	0.233	17.020	17.040	13.000	30.253

* Orifice Equation: $Q = 0.63*A*(2gh)^{1/2}$

** Weir Equation: Q = C*L*H

Active storage volumes determined based on "average volume per m depth" (from pond grading above)

Stage-Discharge-Storage Relationships (for VO model):

EXISTING

Stage (m)	Discharge (m^3/s)	Storage (ha.m)
232.90	0.000	0.0000
233.00	1.362	0.2165
233.10	2.723	0.4330
233.20	4.085	0.6495
233.30	5.446	0.8660
233.40	6.808	1.0825
233.50	8.170	1.2990
233.60	9.531	1.5155
233.70	10.893	1.7320
233.80	12.254	1.9485
233.90	13.616	2.1650
234.00	14.978	2.3815
234.10	19.339	2.6045
234.20	23.000	2.8275
234.30	30.040	3.0505

PROPOSED:

Stage (m)	Discharge (m^3/s)	Storage (ha.m)
232.75	0.000	0.0000
232.85	0.000	0.2165
232.95	0.044	0.4330
233.05	0.076	0.6495
233.15	1.460	0.8660
233.25	2.840	1.0825
233.35	4.217	1.2990
233.45	5.593	1.5155
233.55	6.967	1.7320
233.65	8.340	1.9485
233.75	9.713	2.1650
233.85	11.085	2.3815
233.95	12.457	2.5980
234.00	13.142	2.7063
234.10	17.513	2.9293
234.20	22.083	3.1523
234.30	30.253	3.3753

MILL POND - Rating Curve Calculations

Outlet Control Structure - Extended Detention Orifice

Extended Detention Storage Required:	6,400	m^3
Extended Detention Elevation:	233.05	m
Permanent Pool Elevation:	232.75	m
Max. Extended Detention Depth:	0.30	m
Permanent Pool Area:	21,200	m^2
Extended Detention Pond Area:	21,200	m^2
Orifice Flow Coefficient:	0.63	
Diameter of Orifice Used:	300	mm
Area of Orifice Used:	0.0707	m^2
Extended Detention Peak Flow:	0.0764	m^3/s

The falling head orifice equation is used to calculate the detention time:

$$t = \frac{2A_p}{CA_0(2g)^{0.5}}\left(h_1^{0.5} - h_2^{0.5}\right)$$

Where,

- t = Drawdown Time in Seconds;
- A_p = Surface Area of the Pond (m^2);
- C = Orifice Flow Coefficient;
- A_0 = Cross-sectional Area of the Orifice (m^2);
- g = Gravitational Acceleration Constant (9.81 m/s^2);
- h_1 = Starting Water Elevation above the orifice (m);
- h_2 = Ending Water Elevation above the orifice (m).

Description	Elevation (m)	Surface Area (m^2)		Volume (m^3)	h_1 (m)	h_2 (m)	Maximum Flow (m^3/s)	Drawdown Time (hours)
Extended Detention	233.05	21,200	21,200	6,360	0.30	0.00	0.076	32.7
Permanent Pool	232.75	21,200						
						Total Drawdown Time (hours):		33

SWMF 17-3 - Rating Curve Calculations

EXISTING Pond Grading

Elevation (m)	Area (m^2)	Avg. Area (m^2)	Depth (m)	Volume (m^3)	Cumulat. (m^3)	Active (m^3)	
232.90	1,941						Base of Pond
		5193	2.20	11,423	11,423	0	
235.10	**8,444**						Permanent Pool Elevation
		9717	1.51	14,673	26,096	14,673	
236.61	**10,990**						Max. Water Elevation
		11495	0.39	4,483	30,579	4,483	
237.00	12,000						Top of Pond (300mm freeboard)

PROPOSED Pond Grading

Elevation (m)	Area (m^2)	Avg. Area (m^2)	Depth (m)	Volume (m^3)	Cumulat. (m^3)	Active (m^3)	
232.90	3,843						Base of Pond
		6144	2.20	13,516	13,516	0	
235.10	**8,444**						Permanent Pool Elevation
		9717	1.51	14,673	28,188	14,673	
236.61	**10,990**						Max. Water Elevation
		11495	0.39	4,483	32,671	4,483	
237.00	12,000						Top of Pond (300mm freeboard)

SWMF 17-3 - Rating Curve Calculations

EXISTING Outlet Configuration

	Orifice	Weir	Spill
Orifice dia (mm)/Weir Length (m):	0	1.80	10.00
Invert Elevation:	0.00	235.10	235.70
Orifice/Weir Flow Coefficient:	0.630	1.80	1.80

Description	Elevation (m)	Depth to PP (m)	Active Storage (m3)	Controlled Flow (m3/s)			
				Orifice*	Weir**	Spill	Total
Permanent Pool	**235.10**	0.000	**0**	0.000	0.000	0.000	0.000
	235.30	0.200	1,943	0.000	0.648	0.000	0.648
	235.50	0.400	3,887	0.000	1.296	0.000	1.296
Spill	235.70	0.600	5,830	0.000	1.944	0.000	1.944
	235.90	0.800	7,774	0.000	2.592	14.400	16.992
	236.10	1.000	9,717	0.000	3.240	18.000	21.240
	236.30	1.200	11,660	0.000	3.888	21.600	25.488
	236.50	1.400	13,604	0.000	4.536	25.200	29.736
(Design Spill Elev)	236.61	1.510	14,673	0.000	4.892	27.180	32.072
	237.00	1.900	19,156	0.000	6.156	34.200	40.356

* Orifice Equation: $Q = 0.63*A*(2gh)^{1/2}$

** Weir Equation: $Q = C*L*H$

Weir set at NWL per survey (and design) 235.10m

Spill elevation based on flow bypass around edges of concrete weir structure:

Per survey, top of concrete shown at 236.4m

Per site photos, erosion around edges of structure estimated at 700mm from top of concrete

Weir spill "length" estimated based on inspection of site photos

PROPOSED Outlet Configuration

	Orifice	**DICB**	**DICB**	**Spill**
Orifice dia (mm) / Weir Length (m):	235	1.200	1.200	5.000
Invert Elevation:	235.10	235.47	235.90	236.61
Orifice/Weir Flow Coefficient:	0.630	1.80	1.80	1.80

Description	Elevation (m)	Depth to PP (m)	Active Storage (m3)	Controlled Flow (m3/s)				
				Orifice*	DICB**	DICB**	Spill	Total
Permanent Pool	**235.10**	0.000	**0**	0.000	0.000	0.000	0.000	0.000
	235.30	0.200	1,943	0.035	0.000	0.000	0.000	0.035
	235.50	0.400	3,887	0.064	0.039	0.000	0.000	0.104
	235.70	0.600	5,830	0.084	0.371	0.000	0.000	0.455
	235.90	0.800	7,774	0.100	1.093	0.000	0.000	1.193
	236.10	1.000	9,717	0.114	1.200	0.296	0.000	1.610
	236.30	1.200	11,660	0.126	1.200	0.960	0.000	2.286
	236.50	1.400	13,604	0.137	1.200	1.200	0.000	2.537
Spill	236.61	1.510	14,673	0.143	1.200	1.200	0.000	2.543
	237.00	1.900	19,156	0.162	1.200	1.200	17.100	19.662

* Orifice Equation: $Q = 0.63*A*(2gh)^{1/2}$

** Weir Equation: $Q=L*(3.3986H^2+0.2657H+0.0164)$, to a maximum of $1m^3/s$ per m width.
(equation derived from Design Chart 4.20 in the MTO Drainage Manual for DICB Inlet)

SWMF 17-3 - Rating Curve Calculations

Stage-Discharge-Storage Relationships (for VO model):

EXISTING:

Stage (m)	Discharge (m^3/s)	Storage (ha.m)
235.10	0.000	0.0000
235.30	0.648	0.1943
235.50	1.296	0.3887
235.70	1.944	0.5830
235.90	16.992	0.7774
236.10	21.240	0.9717
236.30	25.488	1.1660
236.50	29.736	1.3604
236.61	32.072	1.4673
237.00	40.356	1.9156

PROPOSED:

Stage (m)	Discharge (m^3/s)	Storage (ha.m)
235.10	0.000	0.0000
235.30	0.035	0.1943
235.50	0.104	0.3887
235.70	0.455	0.5830
235.90	1.193	0.7774
236.10	1.610	0.9717
236.30	2.286	1.1660
236.50	2.537	1.3604
236.61	2.543	1.4673
237.00	19.662	1.9156

EXISTING (previous VO model)

Discharge (m^3/s)	Storage (ha.m)
0.000	0.0000
0.270	0.1782
0.750	0.3620
1.380	0.5513
2.130	0.7461
2.970	0.9461
3.900	1.1514
4.920	1.3623

Pond Outlet Design - Erosion Control Orifice

Extended Detention Storage Required:	#REF!	m^3
Extended Detention Elevation:	235.47	m
Permanent Pool Elevation:	235.10	m
Max. Extended Detention Depth:	0.37	m
Permanent Pool Area:	8,444	m^2
Extended Detention Pond Area:	9,068	m^2
Orifice Flow Coefficient:	0.63	
Diameter of Orifice Used:	**235**	mm
Area of Orifice Used:	0.0434	m^2
Extended Detention Peak Flow:	0.0608	m^3/s

The falling head orifice equation is used to calculate the detention time:

$$t = \frac{2A_p}{CA_0(2g)^{0.5}}\left(h_1^{0.5} - h_2^{0.5}\right)$$

Where,

- t = Drawdown Time in Seconds;
- A_p = Surface Area of the Pond (m^2);
- C = Orifice Flow Coefficient;
- A_0 = Cross-sectional Area of the Orifice (m^2);
- g = Gravitational Acceleration Constant (9.81 m/s^2);
- h_1 = Starting Water Elevation above the orifice (m);
- h_2 = Ending Water Elevation above the orifice (m).

Description	Elevation (m)	Surface Area (m^2)		Volume (m^3)	h_1 (m)	h_2 (m)	Maximum Flow (m^3/s)	Drawdown Time (hours)
Extended Detention	235.47	9,068	8,756	3,240	0.37	0.00	0.061	24.4
Permanent Pool	235.10	8,444						
						Total Drawdown Time (hours):		24

MILL POND - Visual OTTHYMO Model Output Summary

Model: MILL POND EXISTING_Rev2022

[Mill Pond and 17-3 rating curves modified to represent current conditions, per TYLIN calcs]

RUN	NHYD	FT	DT	AREA	PKFW	TP	RV	DWF	TSSC	TPPC	TSSL	TPPL	Elev
_25mm	261	Outflow	0.083	566.961	2.889	2.333	5.436	0	0	0	0	0	233.11
2yrSCS	261	Outflow	0.083	566.961	5.128	6.833	12.388	0	0	0	0	0	233.28
5yrSCS	261	Outflow	0.083	566.96	7.915	6.75	18.425	0	0	0	0	0	233.48
10yrSCS	261	Outflow	0.083	566.593	10.281	6.75	22.93	0	0	0	0	0	233.66
25yrSCS	261	Outflow	0.083	565.809	13.552	6.667	29.092	0	0	0	0	0	233.90
50yrSCS	261	Outflow	0.083	565.172	17.312	6.583	33.75	0	0	0	0	0	234.05
100yrSCS	261	Outflow	0.083	564.543	21.440	6.5	38.762	0	0	0	0	0	234.16

Model: MILL POND PROPOSED_2022 MP Outlet Retrofit

[17-3 rating curve maintained per Existing_Rev2022 above, Mill Pond rating curve revised per TYLIN calcs for proposed retrofit]

RUN	NHYD	FT	DT	AREA	PKFW	TP	RV	DWF	TSSC	TPPC	TSSL	TPPL	Elev
_25mm	261	Outflow	0.083	566.961	2.252	2.583	5.052	0	0	0	0	0	233.21
2yrSCS	261	Outflow	0.083	566.961	5.030	6.833	12.004	0	0	0	0	0	233.41
5yrSCS	261	Outflow	0.083	566.96	7.892	6.75	18.041	0	0	0	0	0	233.62
10yrSCS	261	Outflow	0.083	566.593	10.286	6.75	22.546	0	0	0	0	0	233.79
25yrSCS	261	Outflow	0.083	565.809	14.038	6.667	28.708	0	0	0	0	0	234.02
50yrSCS	261	Outflow	0.083	565.172	18.431	6.5	33.365	0	0	0	0	0	234.12
100yrSCS	261	Outflow	0.083	564.543	22.585	6.417	38.377	0	0	0	0	0	234.21

Model: MILL POND PROPOSED_2022 MP & 17_3 Outlet Retrofit

[17-3 and Mill Pond rating curves revised per TYLIN calcs for proposed retrofits]

RUN	NHYD	FT	DT	AREA	PKFW	TP	RV	DWF	TSSC	TPPC	TSSL	TPPL	Elev
_25mm	261	Outflow	0.083	566.961	1.742	2.667	5.05	0	0	0	0	0	233.17
2yrSCS	261	Outflow	0.083	566.961	4.467	6.917	12.001	0	0	0	0	0	233.37
5yrSCS	261	Outflow	0.083	566.96	7.408	6.833	18.039	0	0	0	0	0	233.58
10yrSCS	261	Outflow	0.083	566.593	9.722	6.75	22.544	0	0	0	0	0	233.75
25yrSCS	261	Outflow	0.083	565.809	12.758	6.75	28.705	0	0	0	0	0	233.97
50yrSCS	261	Outflow	0.083	565.172	16.605	6.583	33.363	0	0	0	0	0	234.08
100yrSCS	261	Outflow	0.083	564.543	20.039	6.5	38.374	0	0	0	0	0	234.16

SWMF 17-3 - Visual OTTHYMO Model Output Summary

Model: MILL POND EXISTING_Rev2022

[Mill Pond and 17-3 rating curves modified to represent current conditions, per TYLIN calcs]

RUN	NHYD	FT	DT	AREA	PKFW	TP	RV	DWF	TSSC	TPPC	TSSL	TPPL	Elev
_25mm	263	Outflow	0.083	51.89	0.663	1.917	11.008	0	0	0	0	0	235.30
2yrSCS	263	Outflow	0.083	51.89	1.116	6.5	22.942	0	0	0	0	0	235.44
5yrSCS	263	Outflow	0.083	51.89	1.626	6.5	32.282	0	0	0	0	0	235.60
10yrSCS	263	Outflow	0.083	51.89	2.387	6.417	38.912	0	0	0	0	0	235.71
25yrSCS	263	Outflow	0.083	51.89	4.681	6.167	47.657	0	0	0	0	0	235.74
50yrSCS	263	Outflow	0.083	51.89	5.987	6.083	54.074	0	0	0	0	0	235.75
100yrSCS	263	Outflow	0.083	51.89	6.611	6.083	60.83	0	0	0	0	0	235.76

Model: MILL POND PROPOSED_2022 MP & 17_3 Outlet Retrofit

[17-3 and Mill Pond rating curves revised per TYLIN calcs for proposed retrofits]

RUN	NHYD	FT	DT	AREA	PKFW	TP	RV	DWF	TSSC	TPPC	TSSL	TPPL	Elev
_25mm	263	Outflow	0.083	51.89	0.174	3.667	10.982	0	0	0	0	0	235.54
2yrSCS	263	Outflow	0.083	51.89	0.664	6.833	22.916	0	0	0	0	0	235.76
5yrSCS	263	Outflow	0.083	51.89	1.247	6.667	32.256	0	0	0	0	0	235.93
10yrSCS	263	Outflow	0.083	51.89	1.540	6.667	38.887	0	0	0	0	0	236.07
25yrSCS	263	Outflow	0.083	51.89	2.095	6.583	47.631	0	0	0	0	0	236.24
50yrSCS	263	Outflow	0.083	51.89	2.390	6.583	54.048	0	0	0	0	0	236.38
100yrSCS	263	Outflow	0.083	51.89	2.540	6.583	60.804	0	0	0	0	0	236.56

Flow Node Locations - Visual OTTHYMO Output
Scenario: MILL POND EXISTING_Rev2022

Node	Event	NHYD	FT	DT	AREA	PKFW	TP	RV
Q	_25mm	241	Outflow	0.083	333.90	2.08	1.42	2.57
Q	2yrSCS	241	Outflow	0.083	333.90	2.74	6.08	6.92
Q	5yrSCS	241	Outflow	0.083	333.90	4.18	6.08	11.24
Q	10yrSCS	241	Outflow	0.083	333.53	5.57	6.08	14.62
Q	25yrSCS	241	Outflow	0.083	332.88	7.26	6.08	19.42
Q	50yrSCS	241	Outflow	0.083	332.37	8.81	6.08	23.15
Q	100yrSCS	241	Outflow	0.083	331.90	10.33	6.08	27.25
L	_25mm	244	Outflow	0.083	110.16	1.44	1.42	9.62
L	2yrSCS	244	Outflow	0.083	110.16	1.70	6.00	20.03
L	5yrSCS	244	Outflow	0.083	110.16	2.50	6.00	28.28
L	10yrSCS	244	Outflow	0.083	110.16	3.14	6.00	34.19
L	25yrSCS	244	Outflow	0.083	110.02	3.62	6.00	42.04
L	50yrSCS	244	Outflow	0.083	109.89	4.09	6.00	47.82
L	100yrSCS	244	Outflow	0.083	109.73	4.46	6.00	53.94
R	_25mm	249	Outflow	0.083	485.06	3.49	1.67	4.83
R	2yrSCS	249	Outflow	0.083	485.06	5.26	6.17	11.16
R	5yrSCS	249	Outflow	0.083	485.06	8.58	6.17	16.77
R	10yrSCS	249	Outflow	0.083	484.69	10.97	6.17	21.00
R	25yrSCS	249	Outflow	0.083	483.90	13.70	6.17	26.81
R	50yrSCS	249	Outflow	0.083	483.27	16.46	6.17	31.23
R	100yrSCS	249	Outflow	0.083	482.64	18.89	6.17	36.01
V	_25mm	255	Outflow	0.083	566.96	3.75	1.83	5.44
V	2yrSCS	255	Outflow	0.083	566.96	6.36	6.33	12.39
V	5yrSCS	255	Outflow	0.083	566.96	10.54	6.25	18.43
V	10yrSCS	255	Outflow	0.083	566.59	13.44	6.25	22.93
V	25yrSCS	255	Outflow	0.083	565.81	18.69	6.25	29.09
V	50yrSCS	255	Outflow	0.083	565.17	22.87	6.17	33.75
V	100yrSCS	255	Outflow	0.083	564.54	26.62	6.17	38.76
X	_25mm	256	Outflow	0.083	596.76	3.04	2.42	5.71
X	2yrSCS	256	Outflow	0.083	596.76	5.38	6.92	12.92
X	5yrSCS	256	Outflow	0.083	596.76	8.38	6.75	19.12
X	10yrSCS	256	Outflow	0.083	596.39	10.92	6.75	23.74
X	25yrSCS	256	Outflow	0.083	595.61	14.54	6.67	30.03
X	50yrSCS	256	Outflow	0.083	594.97	18.25	6.58	34.78
X	100yrSCS	256	Outflow	0.083	594.34	22.83	6.50	39.88
Y	_25mm	257	Outflow	0.083	606.74	3.10	2.42	5.78
Y	2yrSCS	257	Outflow	0.083	606.74	5.49	6.92	13.07
Y	5yrSCS	257	Outflow	0.083	606.74	8.55	6.83	19.33
Y	10yrSCS	257	Outflow	0.083	606.37	11.12	6.75	23.98
Y	25yrSCS	257	Outflow	0.083	605.59	14.84	6.67	30.31
Y	50yrSCS	257	Outflow	0.083	604.95	18.54	6.67	35.09
Y	100yrSCS	257	Outflow	0.083	604.32	23.20	6.58	40.22
W	_25mm	261	Outflow	0.083	566.96	2.89	2.33	5.44
W	2yrSCS	261	Outflow	0.083	566.96	5.13	6.83	12.39
W	5yrSCS	261	Outflow	0.083	566.96	7.92	6.75	18.43
W	10yrSCS	261	Outflow	0.083	566.59	10.28	6.75	22.93
W	25yrSCS	261	Outflow	0.083	565.81	13.55	6.67	29.09
W	50yrSCS	261	Outflow	0.083	565.17	17.31	6.58	33.75
W	100yrSCS	261	Outflow	0.083	564.54	21.44	6.50	38.76
S+T	_25mm	262	Outflow	0.083	51.89	1.98	1.42	11.01
S+T	2yrSCS	262	Outflow	0.083	51.89	2.16	6.00	22.94
S+T	5yrSCS	262	Outflow	0.083	51.89	3.23	6.00	32.28
S+T	10yrSCS	262	Outflow	0.083	51.89	3.96	6.00	38.91
S+T	25yrSCS	262	Outflow	0.083	51.89	5.01	6.00	47.66
S+T	50yrSCS	262	Outflow	0.083	51.89	5.94	6.00	54.08
S+T	100yrSCS	262	Outflow	0.083	51.89	6.77	6.00	60.83
U	_25mm	263	Outflow	0.083	51.89	0.66	1.92	11.01
U	2yrSCS	263	Outflow	0.083	51.89	1.12	6.50	22.94
U	5yrSCS	263	Outflow	0.083	51.89	1.63	6.50	32.28
U	10yrSCS	263	Outflow	0.083	51.89	2.39	6.42	38.91
U	25yrSCS	263	Outflow	0.083	51.89	4.68	6.17	47.66
U	50yrSCS	263	Outflow	0.083	51.89	5.99	6.08	54.07
U	100yrSCS	263	Outflow	0.083	51.89	6.61	6.08	60.83
Z	_25mm	381	Outflow	0.083	654.06	2.14	3.75	6.11
Z	2yrSCS	381	Outflow	0.083	654.06	5.64	7.25	13.69
Z	5yrSCS	381	Outflow	0.083	654.06	8.07	7.25	20.14
Z	10yrSCS	381	Outflow	0.083	653.69	9.21	7.50	24.92
Z	25yrSCS	381	Outflow	0.083	652.91	10.78	7.67	31.49
Z	50yrSCS	381	Outflow	0.083	652.27	15.30	7.25	36.42
Z	100yrSCS	381	Outflow	0.083	651.64	24.92	6.83	41.99

Flow Node Locations - Visual OTTHYMO Output

Scenario: MILL POND PROPOSED_2022 MP & 17_3 Outlet Retrofit

		NHYD	FT	DT	AREA	PKFW	TP	RV
Q	_25mm	241	Outflow	0.083	333.90	2.08	1.42	2.57
Q	2yrSCS	241	Outflow	0.083	333.90	2.74	6.08	6.92
Q	5yrSCS	241	Outflow	0.083	333.90	4.18	6.08	11.24
Q	10yrSCS	241	Outflow	0.083	333.53	5.57	6.08	14.62
Q	25yrSCS	241	Outflow	0.083	332.88	7.26	6.08	19.42
Q	50yrSCS	241	Outflow	0.083	332.37	8.81	6.08	23.15
Q	100yrSCS	241	Outflow	0.083	331.90	10.33	6.08	27.25
L	_25mm	244	Outflow	0.083	110.16	1.44	1.42	9.62
L	2yrSCS	244	Outflow	0.083	110.16	1.70	6.00	20.03
L	5yrSCS	244	Outflow	0.083	110.16	2.50	6.00	28.28
L	10yrSCS	244	Outflow	0.083	110.16	3.14	6.00	34.19
L	25yrSCS	244	Outflow	0.083	110.02	3.62	6.00	42.04
L	50yrSCS	244	Outflow	0.083	109.89	4.09	6.00	47.82
L	100yrSCS	244	Outflow	0.083	109.73	4.46	6.00	53.94
R	_25mm	249	Outflow	0.083	485.06	3.49	1.67	4.83
R	2yrSCS	249	Outflow	0.083	485.06	5.26	6.17	11.16
R	5yrSCS	249	Outflow	0.083	485.06	8.58	6.17	16.77
R	10yrSCS	249	Outflow	0.083	484.69	10.97	6.17	21.00
R	25yrSCS	249	Outflow	0.083	483.90	13.70	6.17	26.81
R	50yrSCS	249	Outflow	0.083	483.27	16.46	6.17	31.23
R	100yrSCS	249	Outflow	0.083	482.64	18.89	6.17	36.01
V	_25mm	255	Outflow	0.083	566.96	3.21	1.83	5.43
V	2yrSCS	255	Outflow	0.083	566.96	5.65	6.42	12.39
V	5yrSCS	255	Outflow	0.083	566.96	9.74	6.33	18.42
V	10yrSCS	255	Outflow	0.083	566.59	12.94	6.25	22.93
V	25yrSCS	255	Outflow	0.083	565.81	16.37	6.25	29.09
V	50yrSCS	255	Outflow	0.083	565.17	19.92	6.25	33.75
V	100yrSCS	255	Outflow	0.083	564.54	22.97	6.25	38.76
X	_25mm	256	Outflow	0.083	596.76	1.86	2.75	5.34
X	2yrSCS	256	Outflow	0.083	596.76	4.68	7.00	12.55
X	5yrSCS	256	Outflow	0.083	596.76	7.84	6.83	18.76
X	10yrSCS	256	Outflow	0.083	596.39	10.32	6.75	23.37
X	25yrSCS	256	Outflow	0.083	595.61	13.57	6.75	29.67
X	50yrSCS	256	Outflow	0.083	594.97	17.52	6.58	34.41
X	100yrSCS	256	Outflow	0.083	594.34	21.27	6.50	39.52
Y	_25mm	257	Outflow	0.083	606.74	1.91	2.83	5.42
Y	2yrSCS	257	Outflow	0.083	606.74	4.76	7.00	12.71
Y	5yrSCS	257	Outflow	0.083	606.74	8.00	6.83	18.97
Y	10yrSCS	257	Outflow	0.083	606.37	10.51	6.75	23.61
Y	25yrSCS	257	Outflow	0.083	605.59	13.83	6.75	29.95
Y	50yrSCS	257	Outflow	0.083	604.95	17.91	6.67	34.73
Y	100yrSCS	257	Outflow	0.083	604.32	21.78	6.58	39.86
W	_25mm	261	Outflow	0.083	566.96	1.74	2.67	5.05
W	2yrSCS	261	Outflow	0.083	566.96	4.47	6.92	12.00
W	5yrSCS	261	Outflow	0.083	566.96	7.41	6.83	18.04
W	10yrSCS	261	Outflow	0.083	566.59	9.72	6.75	22.54
W	25yrSCS	261	Outflow	0.083	565.81	12.76	6.75	28.71
W	50yrSCS	261	Outflow	0.083	565.17	16.61	6.58	33.36
W	100yrSCS	261	Outflow	0.083	564.54	20.04	6.50	38.37
S+T	_25mm	262	Outflow	0.083	51.89	1.98	1.42	11.01
S+T	2yrSCS	262	Outflow	0.083	51.89	2.16	6.00	22.94
S+T	5yrSCS	262	Outflow	0.083	51.89	3.23	6.00	32.28
S+T	10yrSCS	262	Outflow	0.083	51.89	3.96	6.00	38.91
S+T	25yrSCS	262	Outflow	0.083	51.89	5.01	6.00	47.66
S+T	50yrSCS	262	Outflow	0.083	51.89	5.94	6.00	54.08
S+T	100yrSCS	262	Outflow	0.083	51.89	6.77	6.00	60.83
U	_25mm	263	Outflow	0.083	51.89	0.17	3.67	10.98
U	2yrSCS	263	Outflow	0.083	51.89	0.66	6.83	22.92
U	5yrSCS	263	Outflow	0.083	51.89	1.25	6.67	32.26
U	10yrSCS	263	Outflow	0.083	51.89	1.54	6.67	38.89
U	25yrSCS	263	Outflow	0.083	51.89	2.10	6.58	47.63
U	50yrSCS	263	Outflow	0.083	51.89	2.39	6.58	54.05
U	100yrSCS	263	Outflow	0.083	51.89	2.54	6.58	60.80
Z	_25mm	381	Outflow	0.083	654.06	1.40	4.00	5.78
Z	2yrSCS	381	Outflow	0.083	654.06	4.90	7.25	13.35
Z	5yrSCS	381	Outflow	0.083	654.06	7.89	6.58	19.97
Z	10yrSCS	381	Outflow	0.083	653.69	8.96	7.50	24.57
Z	25yrSCS	381	Outflow	0.083	652.91	10.37	7.83	31.06
Z	50yrSCS	381	Outflow	0.083	652.27	14.37	7.42	36.01
Z	100yrSCS	381	Outflow	0.083	651.64	23.15	6.92	41.40

Flow Node Locations - Visual OTTHYMO Output

Scenario: MILL POND PROPOSED_2022 MP Outlet Retrofit

		NHYD	FT	DT	AREA	PKFW	TP	RV
Q	_25mm	241	Outflow	0.083	333.90	2.08	1.42	2.57
Q	2yrSCS	241	Outflow	0.083	333.90	2.74	6.08	6.92
Q	5yrSCS	241	Outflow	0.083	333.90	4.18	6.08	11.24
Q	10yrSCS	241	Outflow	0.083	333.53	5.57	6.08	14.62
Q	25yrSCS	241	Outflow	0.083	332.88	7.26	6.08	19.42
Q	50yrSCS	241	Outflow	0.083	332.37	8.81	6.08	23.15
Q	100yrSCS	241	Outflow	0.083	331.90	10.33	6.08	27.25
L	_25mm	244	Outflow	0.083	110.16	1.44	1.42	9.62
L	2yrSCS	244	Outflow	0.083	110.16	1.70	6.00	20.03
L	5yrSCS	244	Outflow	0.083	110.16	2.50	6.00	28.28
L	10yrSCS	244	Outflow	0.083	110.16	3.14	6.00	34.19
L	25yrSCS	244	Outflow	0.083	110.02	3.62	6.00	42.04
L	50yrSCS	244	Outflow	0.083	109.89	4.09	6.00	47.82
L	100yrSCS	244	Outflow	0.083	109.73	4.46	6.00	53.94
R	_25mm	249	Outflow	0.083	485.06	3.49	1.67	4.83
R	2yrSCS	249	Outflow	0.083	485.06	5.26	6.17	11.16
R	5yrSCS	249	Outflow	0.083	485.05	8.58	6.17	16.77
R	10yrSCS	249	Outflow	0.083	484.69	10.97	6.17	21.00
R	25yrSCS	249	Outflow	0.083	483.90	13.70	6.17	26.81
R	50yrSCS	249	Outflow	0.083	483.27	16.46	6.17	31.23
R	100yrSCS	249	Outflow	0.083	482.64	18.89	6.17	36.01
V	_25mm	255	Outflow	0.083	566.96	3.75	1.83	5.44
V	2yrSCS	255	Outflow	0.083	566.96	6.36	6.33	12.39
V	5yrSCS	255	Outflow	0.083	566.96	10.54	6.25	18.43
V	10yrSCS	255	Outflow	0.083	566.59	13.44	6.25	22.93
V	25yrSCS	255	Outflow	0.083	565.81	18.69	6.25	29.09
V	50yrSCS	255	Outflow	0.083	565.17	22.87	6.17	33.75
V	100yrSCS	255	Outflow	0.083	564.54	26.62	6.17	38.76
X	_25mm	256	Outflow	0.083	596.76	2.37	2.75	5.35
X	2yrSCS	256	Outflow	0.083	596.76	5.27	6.92	12.55
X	5yrSCS	256	Outflow	0.083	596.76	8.35	6.83	18.76
X	10yrSCS	256	Outflow	0.083	596.39	10.92	6.75	23.37
X	25yrSCS	256	Outflow	0.083	595.61	15.12	6.67	29.67
X	50yrSCS	256	Outflow	0.083	594.97	19.55	6.50	34.42
X	100yrSCS	256	Outflow	0.083	594.34	24.07	6.50	39.52
Y	_25mm	257	Outflow	0.083	606.74	2.41	2.75	5.42
Y	2yrSCS	257	Outflow	0.083	606.74	5.36	7.00	12.71
Y	5yrSCS	257	Outflow	0.083	606.74	8.53	6.83	18.97
Y	10yrSCS	257	Outflow	0.083	606.37	11.12	6.75	23.62
Y	25yrSCS	257	Outflow	0.083	605.59	15.32	6.67	29.95
Y	50yrSCS	257	Outflow	0.083	604.95	19.94	6.58	34.73
Y	100yrSCS	257	Outflow	0.083	604.32	24.61	6.50	39.86
W	_25mm	261	Outflow	0.083	566.96	2.25	2.58	5.05
W	2yrSCS	261	Outflow	0.083	566.96	5.03	6.83	12.00
W	5yrSCS	261	Outflow	0.083	566.96	7.89	6.75	18.04
W	10yrSCS	261	Outflow	0.083	566.59	10.29	6.75	22.55
W	25yrSCS	261	Outflow	0.083	565.81	14.04	6.67	28.71
W	50yrSCS	261	Outflow	0.083	565.17	18.43	6.50	33.37
W	100yrSCS	261	Outflow	0.083	564.54	22.58	6.42	38.38
S+T	_25mm	262	Outflow	0.083	51.89	1.98	1.42	11.01
S+T	2yrSCS	262	Outflow	0.083	51.89	2.16	6.00	22.94
S+T	5yrSCS	262	Outflow	0.083	51.89	3.23	6.00	32.28
S+T	10yrSCS	262	Outflow	0.083	51.89	3.96	6.00	38.91
S+T	25yrSCS	262	Outflow	0.083	51.89	5.01	6.00	47.66
S+T	50yrSCS	262	Outflow	0.083	51.89	5.94	6.00	54.08
S+T	100yrSCS	262	Outflow	0.083	51.89	6.77	6.00	60.83
U	_25mm	263	Outflow	0.083	51.89	0.66	1.92	11.01
U	2yrSCS	263	Outflow	0.083	51.89	1.12	6.50	22.94
U	5yrSCS	263	Outflow	0.083	51.89	1.63	6.50	32.28
U	10yrSCS	263	Outflow	0.083	51.89	2.39	6.42	38.91
U	25yrSCS	263	Outflow	0.083	51.89	4.68	6.17	47.66
U	50yrSCS	263	Outflow	0.083	51.89	5.99	6.08	54.07
U	100yrSCS	263	Outflow	0.083	51.89	6.61	6.08	60.83
Z	_25mm	381	Outflow	0.083	654.06	1.60	4.00	5.78
Z	2yrSCS	381	Outflow	0.083	654.06	5.89	7.00	13.41
Z	5yrSCS	381	Outflow	0.083	654.06	8.05	7.25	19.80
Z	10yrSCS	381	Outflow	0.083	653.69	9.21	7.50	24.74
Z	25yrSCS	381	Outflow	0.083	652.91	10.78	7.67	31.17
Z	50yrSCS	381	Outflow	0.083	652.27	15.26	7.17	35.97
Z	100yrSCS	381	Outflow	0.083	651.64	22.57	6.83	41.31