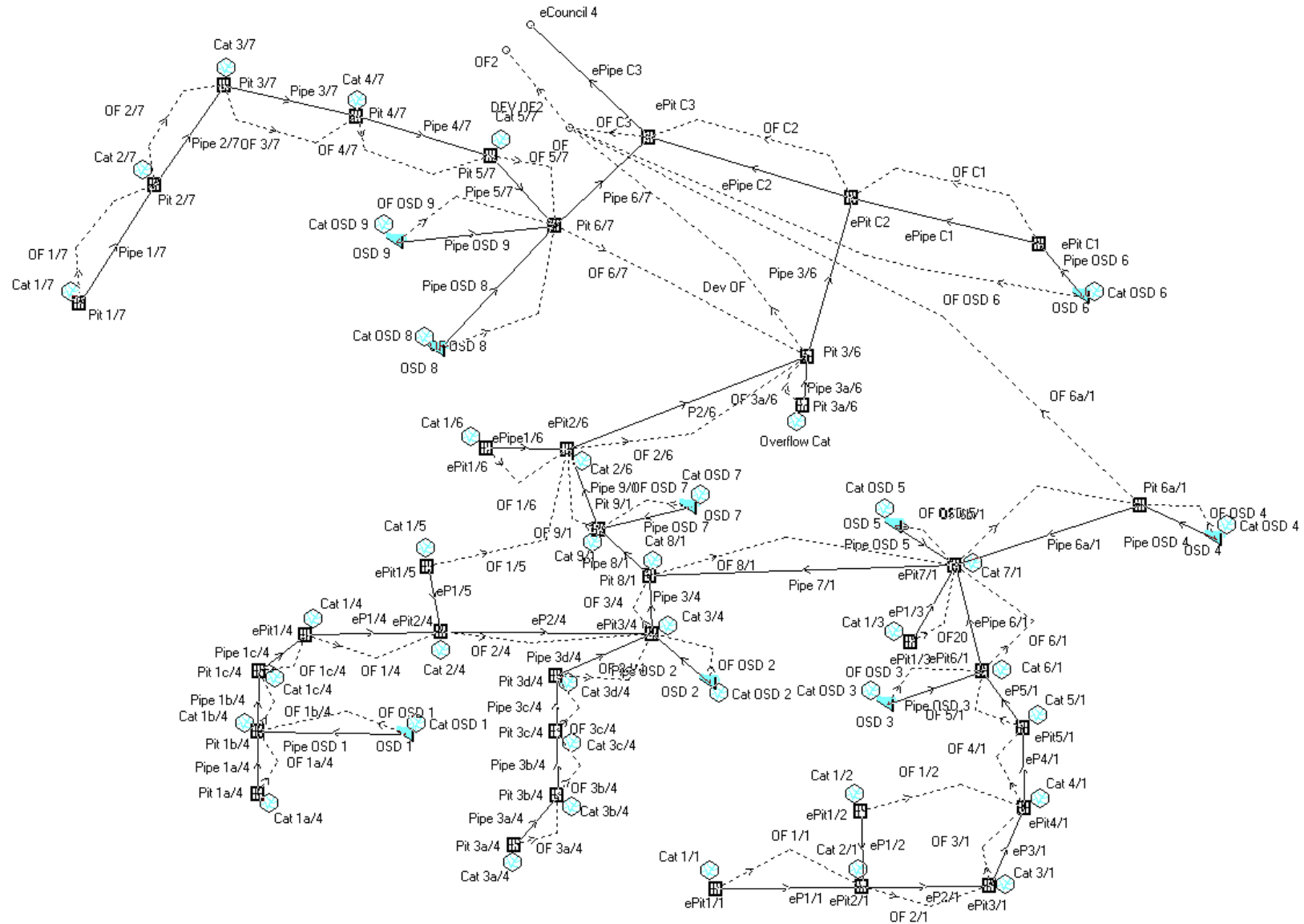


RIVERWOOD NORTH PROJECT



NODE DIAGRAM

RIVERWOOD NORTH PROJECT

PIT / NODE DETAILS			Version 9															
Name	Type	Family	Size	Ponding Volume (cu.m)	Pressure Change Coeff. Ku	Surface Elev (m)	Max Pond Depth (m)	Base Inflow (cu.m/s)	Blocking Factor									
ePit1/6	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		3.2	11.67		0	0.3									
ePit2/6	Sag	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1	2.3	11.56	0.15	0	0.3									
Pit 3/6	OnGrade	1200 SQ Pit	1200 SQ		1.9	10.6		0	0									
ePit C2	OnGrade	900x900 SIP	900x900 SIP		1.5	10.683		0	0									
ePit C3	OnGrade	900x900 SIP	900x900 SIP		1.5	10.188		0	0									
eCouncil 4	Node					9.848		0										
ePit1/5	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		5.9	13.73		0	0									
ePit2/4	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		0.8	13.78		0	0									
ePit3/4	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		2.2	12.74		0	0									
Pit 8/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		1.4	12.64		0	0									
Pit 9/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		0.7	12.84		0	0									
ePit1/3	Sag	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1	3.3	12.31	0.15	0	0									
ePit7/1	Sag	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1	2.2	12.31	0.15	0	0									
ePit1/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		5.5	16.46		0	0									
ePit2/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		2	15.66		0	0									
ePit3/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		1.5	15.36		0	0									
ePit4/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		0.8	14.68		0	0									
ePit5/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		0.4	13.4		0	0									
ePit6/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		0.8	12.78		0	0									
ePit1/2	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		3.4	15.66		0	0									
Pit 1a/4	OnGrade	900x900 SIP	900x900 SIP		5.9	18.1		0	0									
Pit 1b/4	OnGrade	900x900 SIP	900x900 SIP		2.9	17.5		0	0									
Pit 1c/4	OnGrade	900x900 SIP	900x900 SIP		1.2	16.2		0	0									
ePit1/4	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		1	15.36		0	0									
Pit 3a/4	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		5.9	17.2		0	0									
Pit 3b/4	OnGrade	900x900 SIP	900x900 SIP		2.3	17		0	0									
Pit 3c/4	OnGrade	900x900 SIP	900x900 SIP		1.2	15		0	0									
Pit 3d/4	OnGrade	900x900 SIP	900x900 SIP		2.1	14.3		0	0									
Pit 6a/1	OnGrade	900x900 SIP	900x900 SIP	1	0	11.72		0	0									
Pit 6/7	OnGrade	900x900 SIP	900x900 SIP		1.5	10.6		0	0									
OF	Node					10		0										
ePit C1	OnGrade	900x900 SIP	900x900 SIP		1.5	10.738		0	0									
Pit 3a/6	OnGrade	1200 SQ Pit	1200 SQ		4.8	10.7		0	0									
Pit 1/7	OnGrade	900x900 SIP	900x900 SIP		1.5	13.9		0	0									
Pit 2/7	OnGrade	900x900 SIP	900x900 SIP		1.5	12.76		0	0									
Pit 3/7	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		1.5	11.87		0	0									
Pit 4/7	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		1.5	11.37		0	0									
Pit 5/7	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)		1.5	11.2		0	0									
OF2	Node					9		0										
DETENTION BASIN DETAILS																		
Name	Elev	Surf. Area	Init Vol. (cu.m)	Outlet Type	K	Dia(mm)	Centre RL											
OSD 1	15	38	0	Orifice		148	15											
	17.5	38																
OSD 2	13.5	16	0	Orifice		95	13.5											
	16	16																
OSD 3	12.5	16	0	Orifice		98	12.5											
	15	16																
OSD 4	12.5	25	0	Orifice		87	12.5											
	13.5	25																
OSD 5	11.55	75	0	Orifice		108	11.55											
	12.35	75																
OSD 7	12.2	46	0	Orifice		112	12.2											
	13	46																
OSD 8	12.75	16	0	Orifice		96	12.75											
	15.25	16																
OSD 9	12.75	19	0	Orifice		103	12.75											
	15.25	19																
OSD 6	10.5	13	0	Orifice		60	10.5											
	11.5	13																

RIVERWOOD NORTH PROJECT

SUB-CATCHMENT DETAILS			Paved	Grass	Supp	Paved	Grass	Supp	Paved	Grass	Supp	Paved	Grass
Name	Pit or Node	Total Area (ha)	Area %	Area %	Area %	Time (min)	Time (min)	Time (min)	Length (m)	Length (m)	Length (m)	Slope(%)	Slope
Cat 1/6	ePit1/6	0.1909	25.5	74.5	0	5	5	5	5				
Cat 2/6	ePit2/6	0.2004	20.7	79.3	0	5	5	5	5				
Cat 1/5	ePit1/5	0.0646	100	0	0	5	5	5	5				
Cat 2/4	ePit2/4	0.0399	100	0	0	5	5	5	5				
Cat 3/4	ePit3/4	0.0344	100	0	0	5	5	5	5				
Cat 8/1	Pit 8/1	0.0016	100	0	0	5	5	5	5				
Cat 9/1	Pit 9/1	0.0185	100	0	0	5	5	5	5				
Cat 1/3	ePit1/3	0.0764	100	0	0	5	5	5	5				
Cat 7/1	ePit7/1	0.0516	100	0	0	5	5	5	5				
Cat 1/1	ePit1/1	0.322	5.8	94.2	0	5	5	5	5				
Cat 2/1	ePit2/1	0.2822	6.8	93.2	0	5	5	5	5				
Cat 3/1	ePit3/1	0.3042	7.5	92.5	0	5	5	5	5				
Cat 4/1	ePit4/1	0.0482	100	0	0	5	5	5	5				
Cat 5/1	ePit5/1	0.0418	100	0	0	5	5	5	5				
Cat 6/1	ePit6/1	0.0411	100	0	0	5	5	5	5				
Cat 1/2	ePit1/2	0.0584	100	0	0	5	5	5	5				
Cat 1a/4	Pit 1a/4	0.041	100	0	0	5	5	5	5				
Cat 1b/4	Pit 1b/4	0.0328	100	0	0	5	5	5	5				
Cat 1c/4	Pit 1c/4	0.0419	100	0	0	5	5	5	5				
Cat 1/4	ePit1/4	0.3433	20	80	0	5	5	5	5				
Cat 3a/4	Pit 3a/4	0.0956	100	0	0	5	5	5	5				
Cat 3b/4	Pit 3b/4	0.0359	100	0	0	5	5	5	5				
Cat 3c/4	Pit 3c/4	0.0334	100	0	0	5	5	5	5				
Cat 3d/4	Pit 3d/4	0.0442	100	0	0	5	5	5	5				
Cat OSD 1	OSD 1	0.4578	64.2	35.8	0	5	5	5	5				
Cat OSD 2	OSD 2	0.1996	55	45	0	5	5	5	5				
Cat OSD 3	OSD 3	0.2062	42.2	57.8	0	5	5	5	5				
Cat OSD 4	OSD 4	0.1064	60.7	39.3	0	5	5	5	5				
Cat OSD 5	OSD 5	0.116	84.8	15.2	0	5	5	5	5				
Cat OSD 7	OSD 7	0.148	80.6	19.4	0	5	5	5	5				
Cat OSD 8	OSD 8	0.2014	64.2	35.8	0	5	5	5	5				
Cat OSD 9	OSD 9	0.2363	58.1	41.9	0	5	5	5	5				
Cat OSD 6	OSD 6	0.0477	100	0	0	5	5	5	5				
Overflow Cat	Pit 3a/6	0.668	10	90	0	5	5	5	5				
Cat 1/7	Pit 1/7	0.034	100	0	0	5	5	5	5				
Cat 2/7	Pit 2/7	0.0286	100	0	0	5	5	5	5				
Cat 3/7	Pit 3/7	0.013	100	0	0	5	5	5	5				
Cat 4/7	Pit 4/7	0.0397	100	0	0	5	5	5	5				
Cat 5/7	Pit 5/7	0.0302	100	0	0	5	5	5	5				
PIPE DETAILS													
Name	From	To	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Type	Dia (mm)	I.D. (mm)	Rough	Pipe Is	No. Pipes	Chg From
ePipe1/6	ePit1/6	ePit2/6	10.83	10.67	10.5	1.57	Concrete, under roads	375	375	0.3	New	1	ePit1/6
P2/6	ePit2/6	Pit 3/6	45.99	9.954	9.494	1	Concrete, under roads	750	750	0.3	NewFixed	1	ePit2/6
Pipe 3/6	Pit 3/6	ePit C2	6.446	9.344	9.312	0.5	Concrete, under roads	900	900	0.3	NewFixed	1	Pit 3/6
ePipe C2	ePit C2	ePit C3	38	9.282	8.942	0.89	Concrete, under roads	900	900	0.3	New	1	ePit C2
ePipe C3	ePit C3	eCouncil 4	22	8.922	8.646	1.25	Concrete, under roads	900	900	0.3	New	1	ePit C3
eP1/5	ePit1/5	ePit2/4	6.776	12.7	12.52	2.66	Concrete, under roads	375	375	0.3	New	1	ePit1/5
eP2/4	ePit2/4	ePit3/4	30.648	12.52	11.62	2.94	Concrete, under roads	375	375	0.3	New	1	ePit2/4
Pipe 3/4	ePit3/4	Pit 8/1	7.146	11.47	11.399	0.99	Concrete, under roads	525	525	0.3	New	1	ePit3/4
Pipe 8/1	Pit 8/1	Pit 9/1	18.783	10.477	10.383	0.5	Concrete, under roads	750	750	0.3	New	1	Pit 8/1
Pipe 9/1	Pit 9/1	ePit2/6	46.682	10.353	9.984	0.79	Concrete, under roads	750	750	0.3	New	1	Pit 9/1
eP1/3	ePit1/3	ePit7/1	6.561	11.3	11.07	3.51	Concrete, under roads	375	375	0.3	New	1	ePit1/3
Pipe 7/1	ePit7/1	Pit 8/1	30.336	10.735	10.507	0.75	Concrete, under roads	750	750	0.3	New	1	ePit7/1
eP1/1	ePit1/1	ePit2/1	39.241	15.26	14.61	1.66	Concrete, under roads	375	375	0.3	New	1	ePit1/1
eP2/1	ePit2/1	ePit3/1	21.057	14.5	14.13	1.76	Concrete, under roads	375	375	0.3	New	1	ePit2/1
eP3/1	ePit3/1	ePit4/1	22.011	14.13	13.35	3.54	Concrete, under roads	375	375	0.3	New	1	ePit3/1
eP4/1	ePit4/1	ePit5/1	26.541	13.35	12.14	4.56	Concrete, under roads	375	375	0.3	New	1	ePit4/1
eP5/1	ePit5/1	ePit6/1	23.736	12.14	11.69	1.9	Concrete, under roads	450	450	0.3	New	1	ePit5/1
ePipe 6/1	ePit6/1	ePit7/1	30.768	11.69	11	2.24	Concrete, under roads	450	450	0.3	New	1	ePit6/1

RIVERWOOD NORTH PROJECT

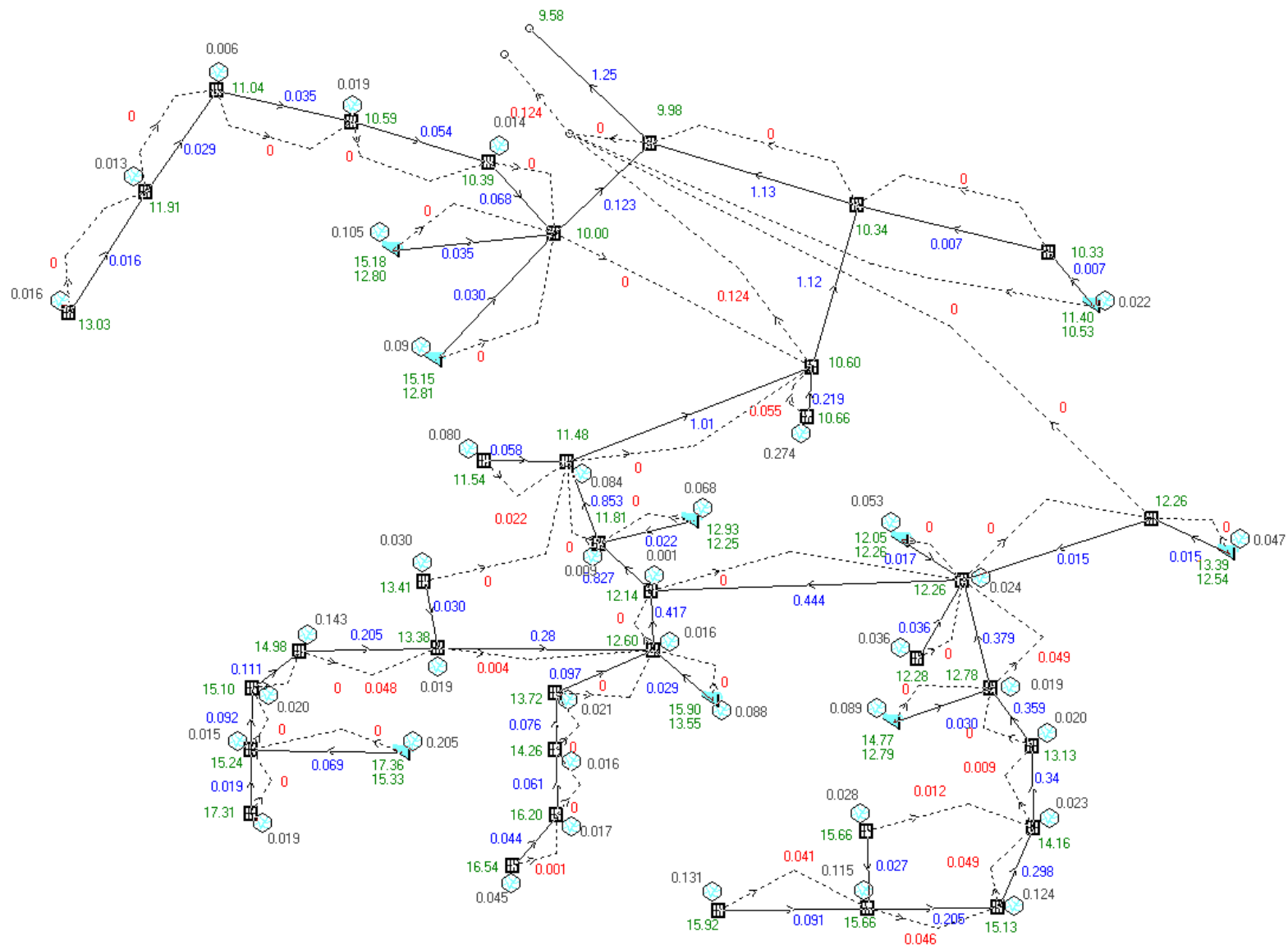
eP1/2	ePit1/2	ePit2/1	10.277	14.72	14.5	2.14	Concrete, under roads	375	375	0.3	New	1	ePit1/2
Pipe 1a/4	Pit 1a/4	Pit 1b/4	17.882	17.09	16.49	3.36	Concrete, under roads	375	375	0.3	New	1	Pit 1a/4
Pipe 1b/4	Pit 1b/4	Pit 1c/4	22.761	14.768	14.595	0.76	Concrete, under roads	375	375	0.3	New	1	Pit 1b/4
Pipe 1c/4	Pit 1c/4	ePit1/4	19.071	14.565	14.47	0.5	Concrete, under roads	375	375	0.3	New	1	Pit 1c/4
eP1/4	ePit1/4	ePit2/4	51.178	14.44	12.59	3.61	Concrete, under roads	375	375	0.3	New	1	ePit1/4
Pipe 3a/4	Pit 3a/4	Pit 3b/4	27.435	16.19	15.916	1	Concrete, under roads	375	375	0.3	New	1	Pit 3a/4
Pipe 3b/4	Pit 3b/4	Pit 3c/4	18.771	15.886	13.99	10.1	Concrete, under roads	375	375	0.3	New	1	Pit 3b/4
Pipe 3c/4	Pit 3c/4	Pit 3d/4	25.101	13.96	13.29	2.67	Concrete, under roads	375	375	0.3	New	1	Pit 3c/4
Pipe 3d/4	Pit 3d/4	ePit3/4	29.288	13.26	11.73	5.22	Concrete, under roads	375	375	0.3	New	1	Pit 3d/4
Pipe OSD 1	OSD 1	Pit 1b/4	32.023	15	14.84	0.5	Concrete, under roads	300	300	0.3	NewFixed	1	OSD 1
Pipe OSD 2	OSD 2	ePit3/4	13.454	13.5	11.809	12.57	Concrete, under roads	300	300	0.3	NewFixed	1	OSD 2
Pipe OSD 3	OSD 3	ePit6/1	14.362	12.5	11.849	4.53	Concrete, under roads	300	300	0.3	NewFixed	1	OSD 3
Pipe OSD 4	OSD 4	Pit 6a/1	8.449	12.5	11.105	16.51	Concrete, under roads	300	300	0.3	NewFixed	1	OSD 4
Pipe 6a/1	Pit 6a/1	ePit7/1	37.798	11.03	10.841	0.5	Concrete, under roads	375	375	0.3	NewFixed	1	Pit 6a/1
Pipe OSD 5	OSD 5	ePit7/1	10.553	11.55	11.218	3.15	Concrete, under roads	300	300	0.3	NewFixed	1	OSD 5
Pipe OSD 7	OSD 7	Pit 9/1	4.51	12.2	11.909	6.45	Concrete, under roads	300	300	0.3	NewFixed	1	OSD 7
Pipe OSD 8	OSD 8	Pit 6/7	79.856	12.75	9.868	3.61	Concrete, under roads	375	375	0.3	NewFixed	1	OSD 8
Pipe 6/7	Pit 6/7	ePit C3	38.73	9.327	8.94	1	Concrete, under roads	525	525	0.3	NewFixed	1	Pit 6/7
Pipe OSD 9	OSD 9	Pit 6/7	27.91	12.75	9.868	10.33	Concrete, under roads	375	375	0.3	NewFixed	1	OSD 9
Pipe OSD 6	OSD 6	ePit C1	5	10.5	9.882	12.36	Concrete, under roads	300	300	0.3	NewFixed	1	OSD 6
ePipe C1	ePit C1	ePit C2	30.233	9.432	9.19	0.8	Concrete, under roads	750	750	0.3	New	1	ePit C1
Pipe 3a/6	Pit 3a/6	Pit 3/6	10	9.444	9.344	1	Concrete, under roads	750	750	0.3	New	1	Pit 3a/6
Pipe 1/7	Pit 1/7	Pit 2/7	21.458	12.89	11.75	5.31	Concrete, under roads	375	375	0.3	New	1	Pit 1/7
Pipe 2/7	Pit 2/7	Pit 3/7	13.191	11.72	10.86	6.52	Concrete, under roads	375	375	0.3	New	1	Pit 2/7
Pipe 3/7	Pit 3/7	Pit 4/7	24.927	10.83	10.36	1.89	Concrete, under roads	375	375	0.3	New	1	Pit 3/7
Pipe 4/7	Pit 4/7	Pit 5/7	21.045	10.33	10.12	1	Concrete, under roads	375	375	0.3	New	1	Pit 4/7
Pipe 5/7	Pit 5/7	Pit 6/7	7.226	10.09	10.018	1	Concrete, under roads	375	375	0.3	New	1	Pit 5/7
OVERFLOW ROUTE DETAILS													
Name	From	To	Travel Time (min)	Spill Level (m)	Crest Length (m)	Weir Coeff. C	Cross Section	Safe Depth Major Storms (m)	SafeDepth Minor Storms (m)	Safe DxDV (sq.m/sec)	Bed Slope (%)	D/S Area Contributing %	
OF 1/6	ePit1/6	ePit2/6	3				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 2/6	ePit2/6	Pit 3/6	3				Dummy	0.2	0.05	0.6	1	0	
Dev OF	Pit 3/6	OF	5				Dummy	0.2	0.05	0.6	1	0	
OF C2	ePit C2	ePit C3	5				Dummy	0.2	0.05	0.6	1	0	
OF C3	ePit C3	OF	5				Dummy	0.2	0.05	0.6	1	0	
OF 1/5	ePit1/5	ePit2/6	3				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 2/4	ePit2/4	Pit3/4	3				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 3/4	ePit3/4	Pit 8/1	5				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 8/1	Pit 8/1	ePit7/1	5				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 9/1	Pit 9/1	ePit2/6	5				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF20	ePit1/3	ePit7/1	3				Dummy	0.2	0.05	0.6	1	0	
OF 6b/1	ePit7/1	Pit 6a/1	5				Dummy	0.2	0.05	0.6	1	0	
OF 1/1	ePit1/1	ePit2/1	3				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 2/1	ePit2/1	ePit3/1	3				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 3/1	ePit3/1	ePit4/1	3				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 4/1	ePit4/1	ePit5/1	3				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 5/1	ePit5/1	ePit6/1	3				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 6/1	ePit6/1	ePit7/1	3				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 1/2	ePit1/2	ePit4/1	3				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 1a/4	Pit 1a/4	Pit 1b/4	5				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 1b/4	Pit 1b/4	Pit 1c/4	5				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 1c/4	Pit 1c/4	ePit1/4	5				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 1/4	ePit1/4	ePit2/4	3				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 3a/4	Pit 3a/4	Pit 3b/4	5				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 3b/4	Pit 3b/4	Pit 3c/4	5				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 3c/4	Pit 3c/4	Pit 3d/4	5				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF 3d/4	Pit 3d/4	ePit3/4	5				8 m wide road (half section)	0.3	0.3	0.4	1	0	
OF OSD 1	OSD 1	Pit 1b/4	5	17.5	5	1.67	Dummy	0.2	0.05	0.6	1	0	
OF OSD 2	OSD 2	ePit3/4	5	16	5	1.67	Dummy	0.2	0.05	0.6	1	0	
OF OSD 3	OSD 3	ePit6/1	5	15	5	1.67	Dummy	0.2	0.05	0.6	1	0	
OF OSD 4	OSD 4	Pit 6a/1	5	13.5	5	1.67	Dummy	0.2	0.05	0.6	1	0	
OF 6a/1	Pit 6a/1	OF	5				Riverwood 12m	0.3	0.3	0.6	1	0	
OF OSD 5	OSD 5	ePit7/1	5	12.35	5	1.67	Dummy	0.2	0.05	0.6	1	0	

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OF OSD 7	OSD 7	Pit 9/1	5	13	5	1.67	Dummy	0.2	0.05	0.6	1	0
OF OSD 8	OSD 8	Pit 6/7	5	15.25	5	1.67	Dummy	0.2	0.05	0.6	1	0
OF 6/7	Pit 6/7	Pit 3/6	5				Dummy	0.2	0.05	0.6	1	0
OF OSD 9	OSD 9	Pit 6/7	5	15.25	5	1.67	Dummy	0.2	0.05	0.6	1	0
DEV OF2	OF	OF2	5				Dummy	0.2	0.05	0.6	1	0
OF OSD 6	OSD 6	OF	5	11.5	2	1.67	Dummy	0.2	0.05	0.6	1	0
OF C1	ePit C1	ePit C2	5				Dummy	0.2	0.05	0.6	1	0
OF 3a/6	Pit 3a/6	Pit 3/6	5				Dummy	0.2	0.05	0.6	1	0
OF 1/7	Pit 1/7	Pit 2/7	5				Dummy	0.2	0.05	0.6	1	0
OF 2/7	Pit 2/7	Pit 3/7	5				Dummy	0.2	0.05	0.6	1	0
OF 3/7	Pit 3/7	Pit 4/7	5				Dummy	0.2	0.05	0.6	1	0
OF 4/7	Pit 4/7	Pit 5/7	5				Dummy	0.2	0.05	0.6	1	0
OF 5/7	Pit 5/7	Pit 6/7	5				Dummy	0.2	0.05	0.6	1	0

DATA

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10 YEAR RESULTS

RIVERWOOD NORTH PROJECT

DRAINS results prepared 03 February, 2011 from Version 2011.03							
PIT / NODE DETAILS							
Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Version 8 Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
ePit1/6	11.54		0.08		0.13	0.022	Inlet Capacity
ePit2/6	11.48	11.69	0.097	0.8	0.08	0	Inlet Capacity
Pit 3/6	10.6		0.055		0	0.124	Outlet System
ePit C2	10.34		0		0.35	0	None
ePit C3	9.98		0		0.21	0	None
eCouncil 4	9.58		0				
ePit1/5	13.41		0.03		0.32	0	None
ePit2/4	13.38		0.058		0.4	0.004	Inlet Capacity
ePit3/4	12.6		0.016		0.14	0	None
Pit 8/1	12.14		0.001		0.5	0	None
Pit 9/1	11.81		0.009		1.03	0	None
ePit1/3	12.28	12.33	0.036	0.1	0.03	0	Inlet Capacity
ePit7/1	12.26	12.33	0.062	0.1	0.05	0	Inlet Capacity
ePit1/1	15.92		0.131		0.54	0.041	Inlet Capacity
ePit2/1	15.66		0.139		0	0.046	Inlet Capacity
ePit3/1	15.13		0.144		0.23	0.049	Inlet Capacity
ePit4/1	14.16		0.073		0.52	0.009	Inlet Capacity
ePit5/1	13.13		0.02		0.27	0	None
ePit6/1	12.78		0.019		0	0.049	Outlet System
ePit1/2	15.66		0.028		0	0.012	Outlet System
Pit 1a/4	17.31		0.019		0.79	0	None
Pit 1b/4	15.24		0.015		2.26	0	None
Pit 1c/4	15.1		0.02		1.1	0	None
ePit1/4	14.98		0.143		0.38	0.048	Inlet Capacity
Pit 3a/4	16.54		0.045		0.66	0.001	Inlet Capacity
Pit 3b/4	16.2		0.017		0.8	0	None
Pit 3c/4	14.26		0.016		0.74	0	None
Pit 3d/4	13.72		0.021		0.58	0	None
Pit 6a/1	12.26		0		-0.54	0	Outlet System
Pit 6/7	10		0		0.6	0	None
ePit C1	10.33		0		0.41	0	None
Pit 3a/6	10.66		0.274		0.04	0.055	Inlet Capacity
Pit 1/7	13.03		0.016		0.87	0	None
Pit 2/7	11.91		0.013		0.85	0	None
Pit 3/7	11.04		0.006		0.83	0	None
Pit 4/7	10.59		0.019		0.78	0	None
Pit 5/7	10.39		0.014		0.81	0	None
SUB-CATCHMENT DETAILS							
Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
Cat 1/6	0.08	0.023	0.057	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 2/6	0.084	0.02	0.064	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 1/5	0.03	0.03	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 2/4	0.019	0.019	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 3/4	0.016	0.016	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 8/1	0.001	0.001	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 9/1	0.009	0.009	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 1/3	0.036	0.036	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 7/1	0.024	0.024	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 1/1	0.131	0.009	0.122	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 2/1	0.115	0.009	0.106	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 3/1	0.124	0.011	0.114	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 4/1	0.023	0.023	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 5/1	0.02	0.02	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 6/1	0.019	0.019	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 1/2	0.028	0.028	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 1a/4	0.019	0.019	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1

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Cat 1b/4	0.015	0.015	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 1c/4	0.02	0.02	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 1/4	0.143	0.032	0.111	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 3a/4	0.045	0.045	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 3b/4	0.017	0.017	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 3c/4	0.016	0.016	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 3d/4	0.021	0.021	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat OSD 1	0.205	0.139	0.066	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat OSD 2	0.088	0.052	0.036	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat OSD 3	0.089	0.041	0.048	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat OSD 4	0.047	0.03	0.017	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat OSD 5	0.053	0.046	0.007	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat OSD 7	0.068	0.056	0.012	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat OSD 8	0.09	0.061	0.029	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat OSD 9	0.105	0.065	0.04	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat OSD 6	0.022	0.022	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Overflow Cat	0.274	0.031	0.243	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 1/7	0.016	0.016	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 2/7	0.013	0.013	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 3/7	0.006	0.006	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 4/7	0.019	0.019	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat 5/7	0.014	0.014	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Outflow Volumes for Total Catchment (2.32 impervious + 2.66 pervious = 4.98 total ha)							
Storm	Total Rainfall	Total Runoff	Impervious Runoff	Pervious Runoff			
	cu.m	cu.m (Runoff %)	cu.m (Runoff %)	cu.m (Runoff %)			
AR&R 10 year, 5 minutes storm, average 168 mm/h, Zone 1	696.81	444.82 (63.8%)	301.64 (92.9%)	143.18 (38.5%)			
AR&R 10 year, 10 minutes storm, average 131 mm/h, Zone 1	1086.69	778.12 (71.6%)	483.40 (95.4%)	294.72 (50.8%)			
AR&R 10 year, 15 minutes storm, average 110 mm/h, Zone 1	1368.73	1012.59 (74.0%)	614.89 (96.4%)	397.70 (54.4%)			
AR&R 10 year, 20 minutes storm, average 97 mm/h, Zone 1	1609.3	1213.31 (75.4%)	727.04 (96.9%)	486.27 (56.6%)			
AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1	1804.24	1365.50 (75.7%)	817.92 (97.2%)	547.58 (56.9%)			
AR&R 10 year, 30 minutes storm, average 79 mm/h, Zone 1	1966	1489.77 (75.8%)	893.33 (97.5%)	596.44 (56.8%)			
AR&R 10 year, 45 minutes storm, average 64 mm/h, Zone 1	2389.06	1826.08 (76.4%)	1090.56 (97.9%)	735.52 (57.7%)			
AR&R 10 year, 1 hour storm, average 55 mm/h, Zone 1	2737.47	2105.42 (76.9%)	1252.98 (98.2%)	852.44 (58.3%)			
AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1	3210.3	2466.61 (76.8%)	1473.42 (98.4%)	993.19 (58.0%)			
AR&R 10 year, 2 hours storm, average 35.9 mm/h, Zone 1	3573.64	2739.75 (76.7%)	1642.80 (98.6%)	1096.95 (57.5%)			
AR&R 10 year, 3 hours storm, average 27.9 mm/h, Zone 1	4165.92	3187.02 (76.5%)	1918.94 (98.8%)	1268.09 (57.0%)			
AR&R 10 year, 4.5 hours storm, average 21.6 mm/h, Zone 1	4837.85	3643.10 (75.3%)	2232.24 (99.0%)	1410.87 (54.6%)			
PIPE DETAILS							
Name	Max Q	Max V	Max U/S	Max D/S	Due to Storm		
	(cu.m/s)	(m/s)	HGL (m)	HGL (m)			
ePipe1/6	0.058	0.53	11.491	11.483	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1		
P2/6	1.007	2.28	10.863	10.6	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1		
Pipe 3/6	1.124	1.77	10.34	10.338	AR&R 10 year, 15 minutes storm, average 110 mm/h, Zone 1		
ePipe C2	1.129	1.94	10.054	9.979	AR&R 10 year, 2 hours storm, average 35.9 mm/h, Zone 1		
ePipe C3	1.246	2.24	9.655	9.581	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1		
eP1/5	0.03	0.28	13.383	13.381	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1		
eP2/4	0.28	2.54	13.105	12.596	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1		
Pipe 3/4	0.417	1.93	12.182	12.137	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1		
Pipe 8/1	0.827	1.87	11.887	11.814	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1		
Pipe 9/1	0.853	1.93	11.675	11.483	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1		
eP1/3	0.036	0.33	12.265	12.263	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1		
Pipe 7/1	0.444	1.01	12.166	12.137	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1		
eP1/1	0.091	0.82	15.726	15.656	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1		
eP2/1	0.205	1.86	15.312	15.133	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1		
eP3/1	0.298	2.7	14.567	14.162	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1		
eP4/1	0.34	3.07	13.771	13.126	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1		
eP5/1	0.359	2.26	13.03	12.78	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1		
ePipe 6/1	0.379	2.38	12.575	12.263	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1		
eP1/2	0.027	0.24	15.656	15.656	AR&R 10 year, 20 minutes storm, average 97 mm/h, Zone 1		
Pipe 1a/4	0.019	2.08	17.142	16.542	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1		
Pipe 1b/4	0.092	0.84	15.139	15.096	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1		
Pipe 1c/4	0.111	1	15.034	14.983	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1		
eP1/4	0.205	3.74	14.627	13.381	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1		

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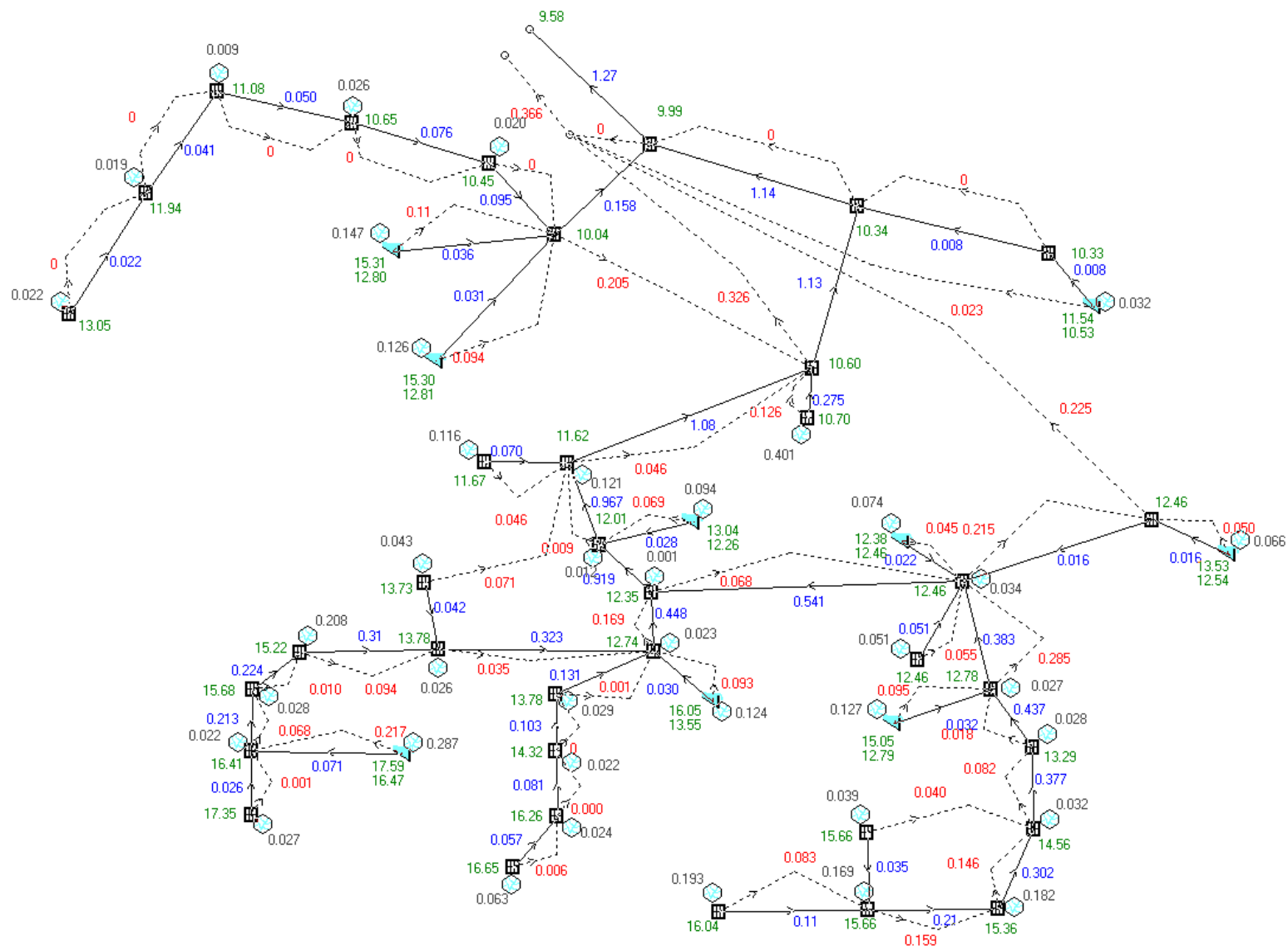
Pipe 3a/4	0.044	1.56	16.304	16.201	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
Pipe 3b/4	0.061	4.32	15.956	14.26	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
Pipe 3c/4	0.076	2.6	14.077	13.715	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
Pipe 3d/4	0.097	3.57	13.37	12.596	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
Pipe OSD 1	0.069	0.97	15.33	15.244	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1			
Pipe OSD 2	0.029	3.95	13.549	12.596	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1			
Pipe OSD 3	0.03	0.43	12.788	12.78	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1			
Pipe OSD 4	0.015	3.21	12.535	12.265	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1			
Pipe 6a/1	0.015	0.13	12.265	12.263	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1			
Pipe OSD 5	0.017	0.23	12.263	12.263	AR&R 10 year, 2 hours storm, average 35.9 mm/h, Zone 1			
Pipe OSD 7	0.022	2.86	12.25	11.959	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1			
Pipe OSD 8	0.03	2.46	12.813	10.003	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1			
Pipe 6/7	0.123	0.57	9.991	9.979	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1			
Pipe OSD 9	0.035	3.69	12.802	10.003	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1			
Pipe OSD 6	0.007	1.91	10.53	10.329	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1			
ePipe C1	0.007	0.02	10.329	10.338	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1			
Pipe 3a/6	0.219	0.5	10.603	10.6	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
Pipe 1/7	0.016	2.16	12.935	11.907	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
Pipe 2/7	0.029	3.01	11.774	11.036	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
Pipe 3/7	0.035	1.98	10.912	10.59	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
Pipe 4/7	0.054	1.63	10.457	10.387	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
Pipe 5/7	0.068	1.71	10.236	10.164	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
OVERFLOW ROUTE DETAILS								
Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
OF 1/6	0.022	0.022	1.152	0.077	0.05	1.22	0.71	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 2/6	0	0	0.256	0	0	0	0	
Dev OF	0.124	0.124	0.256	0.038	0.02	11.63	0.52	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF C2	0	0	0.256	0	0	0	0	
OF C3	0	0	0.256	0	0	0	0	
OF 1/5	0	0	1.152	0	0	0	0	
OF 2/4	0.004	0.004	1.152	0.043	0.03	0.35	0.6	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 3/4	0	0	1.152	0	0	0	0	
OF 8/1	0	0	1.152	0	0	0	0	
OF 9/1	0	0	1.152	0	0	0	0	
OF20	0	0	0.256	0	0	0	0	
OF 6b/1	0	0	0.256	0	0	0	0	
OF 1/1	0.041	0.041	1.152	0.091	0.07	1.68	0.79	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 2/1	0.046	0.046	1.152	0.094	0.08	1.77	0.81	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 3/1	0.049	0.049	1.152	0.096	0.08	1.83	0.82	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 4/1	0.009	0.009	1.152	0.058	0.04	0.57	0.66	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 5/1	0	0	1.152	0	0	0	0	
OF 6/1	0.049	0.049	1.152	0.096	0.08	1.83	0.82	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 1/2	0.012	0.012	1.152	0.064	0.04	0.77	0.65	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 1a/4	0	0	1.152	0	0	0	0	
OF 1b/4	0	0	1.152	0	0	0	0	
OF 1c/4	0	0	1.152	0	0	0	0	
OF 1/4	0.048	0.048	1.152	0.095	0.08	1.81	0.82	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 3a/4	0.001	0.001	1.152	0.024	0.01	0.19	0.39	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 3b/4	0	0	1.152	0	0	0	0	
OF 3c/4	0	0	1.152	0	0	0	0	
OF 3d/4	0	0	1.152	0	0	0	0	
OF OSD 1	0	0	0.256	0	0	0	0	
OF OSD 2	0	0	0.256	0	0	0	0	
OF OSD 3	0	0	0.256	0	0	0	0	
OF OSD 4	0	0	0.256	0	0	0	0	
OF 6a/1	0	0	4.97	0	0	0	0	
OF OSD 5	0	0	0.256	0	0	0	0	
OF OSD 7	0	0	0.256	0	0	0	0	
OF OSD 8	0	0	0.256	0	0	0	0	
OF 6/7	0	0	0.256	0	0	0	0	
OF OSD 9	0	0	0.256	0	0	0	0	
DEV OF2	0.124	0.124	0.256	0.038	0.02	11.63	0.52	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF OSD 6	0	0	0.256	0	0	0	0	
OF C1	0	0	0.256	0	0	0	0	

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OF 3a/6	0.055	0.055	0.256	0.028	0.01	9.43	0.42	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 1/7	0	0	0.256	0	0	0	0	
OF 2/7	0	0	0.256	0	0	0	0	
OF 3/7	0	0	0.256	0	0	0	0	
OF 4/7	0	0	0.256	0	0	0	0	
OF 5/7	0	0	0.256	0	0	0	0	
DETENTION BASIN DETAILS								
Name	Max WL	MaxVol	Max Q	Max Q	Max Q			
			Total	Low Level	High Level			
OSD 1	17.36	96.8	0.069	0.069	0			
OSD 2	15.9	39	0.029	0.029	0			
OSD 3	14.77	37.7	0.03	0.03	0			
OSD 4	13.39	22.5	0.015	0.015	0			
OSD 5	12.05	37.8	0.017	0.017	0			
OSD 7	12.93	34	0.022	0.022	0			
OSD 8	15.15	41.4	0.03	0.03	0			
OSD 9	15.18	47.1	0.035	0.035	0			
OSD 6	11.4	12	0.007	0.007	0			
Upwelling occurred at Pit 3/6, ePit6/1								
Freeboard was less than 0.15m at Pit 3a/6, ePit1/2, ePit2/1, ePit1/3, ePit7/1, ePit3/4, ePit2/6, ePit1/6								

10 YEAR RESULTS

RIVERWOOD NORTH PROJECT

**100 YEAR RESULTS**

RIVERWOOD NORTH PROJECT

DRAINS results prepared 03 February, 2011 from Version 2011.03							
PIT / NODE DETAILS							
Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Version 8 Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
ePit1/6	11.67		0.116		0	0.046	Outlet System
ePit2/6	11.62	11.71	0.159	1	-0.06	0.046	Outlet System
Pit 3/6	10.6		0.233		0	0.326	Outlet System
ePit C2	10.34		0		0.35	0	None
ePit C3	9.99		0		0.2	0	None
eCouncil 4	9.58		0				
ePit1/5	13.73		0.043		0	0.071	Outlet System
ePit2/4	13.78		0.111		0	0.035	Outlet System
ePit3/4	12.74		0.123		0	0.169	Outlet System
Pit 8/1	12.35		0.17		0.29	0.068	Inlet Capacity
Pit 9/1	12.01		0.072		0.83	0.009	Inlet Capacity
ePit1/3	12.46	12.46	0.051	1	-0.15	0.055	Outlet System
ePit7/1	12.46	12.46	0.323	1	-0.15	0.215	Outlet System
ePit1/1	16.04		0.193		0.42	0.083	Inlet Capacity
ePit2/1	15.66		0.217		0	0.159	Outlet System
ePit3/1	15.36		0.269		0	0.146	Outlet System
ePit4/1	14.56		0.191		0.12	0.082	Inlet Capacity
ePit5/1	13.29		0.089		0.11	0.018	Inlet Capacity
ePit6/1	12.78		0.103		0	0.285	Outlet System
ePit1/2	15.66		0.039		0	0.04	Outlet System
Pit 1a/4	17.35		0.027		0.75	0.001	Inlet Capacity
Pit 1b/4	16.41		0.223		1.09	0.068	Inlet Capacity
Pit 1c/4	15.68		0.076		0.52	0.01	Inlet Capacity
ePit1/4	15.22		0.208		0.14	0.094	Inlet Capacity
Pit 3a/4	16.65		0.063		0.55	0.006	Inlet Capacity
Pit 3b/4	16.26		0.024		0.74	0	Inlet Capacity
Pit 3c/4	14.32		0.022		0.68	0	None
Pit 3d/4	13.78		0.029		0.52	0.001	Inlet Capacity
Pit 6a/1	12.46		0.225		-0.74	0.225	Outlet System
Pit 6/7	10.04		0.205		0.56	0.205	Inlet Capacity
ePit C1	10.33		0		0.41	0	None
Pit 3a/6	10.7		0.401		0	0.126	Outlet System
Pit 1/7	13.05		0.022		0.85	0	None
Pit 2/7	11.94		0.019		0.82	0	None
Pit 3/7	11.08		0.009		0.79	0	None
Pit 4/7	10.65		0.026		0.72	0	None
Pit 5/7	10.45		0.02		0.75	0	None
SUB-CATCHMENT DETAILS							
Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
Cat 1/6	0.116	0.031	0.085	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat 2/6	0.121	0.027	0.095	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat 1/5	0.043	0.043	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 2/4	0.026	0.026	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 3/4	0.023	0.023	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 8/1	0.001	0.001	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 9/1	0.012	0.012	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 1/3	0.051	0.051	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 7/1	0.034	0.034	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 1/1	0.193	0.012	0.181	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat 2/1	0.169	0.012	0.157	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat 3/1	0.182	0.015	0.168	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat 4/1	0.032	0.032	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 5/1	0.028	0.028	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 6/1	0.027	0.027	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 1/2	0.039	0.039	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 1a/4	0.027	0.027	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1

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Cat 1b/4	0.022	0.022	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 1c/4	0.028	0.028	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 1/4	0.208	0.044	0.164	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat 3a/4	0.063	0.063	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 3b/4	0.024	0.024	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 3c/4	0.022	0.022	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 3d/4	0.029	0.029	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat OSD 1	0.287	0.189	0.098	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat OSD 2	0.124	0.071	0.054	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat OSD 3	0.127	0.056	0.071	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat OSD 4	0.066	0.042	0.025	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat OSD 5	0.074	0.064	0.01	5	5	5	AR&R 100 year, 15 minutes storm, average 166 mm/h, Zone 1
Cat OSD 7	0.094	0.078	0.016	5	5	5	AR&R 100 year, 15 minutes storm, average 166 mm/h, Zone 1
Cat OSD 8	0.126	0.083	0.043	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat OSD 9	0.147	0.088	0.059	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat OSD 6	0.032	0.032	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Overflow Cat	0.401	0.043	0.358	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat 1/7	0.022	0.022	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 2/7	0.019	0.019	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 3/7	0.009	0.009	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 4/7	0.026	0.026	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat 5/7	0.02	0.02	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Outflow Volumes for Total Catchment (2.32 impervious + 2.66 pervious = 4.98 total ha)							
Storm	Total Rainfall cu.m	Total Runoff cu.m (Runoff %)	Impervious Runoff cu.m (Runoff %)	Pervious Runoff cu.m (Runoff %)			
AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1	1036.92	783.21 (75.5%)	460.20 (95.2%)	323.00 (58.4%)			
AR&R 100 year, 10 minutes storm, average 195 mm/h, Zone 1	1617.59	1306.78 (80.8%)	730.91 (96.9%)	575.87 (66.7%)			
AR&R 100 year, 15 minutes storm, average 166 mm/h, Zone 1	2065.54	1705.66 (82.6%)	939.74 (97.6%)	765.92 (69.5%)			
AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1	2422.24	2019.40 (83.4%)	1106.03 (97.9%)	913.37 (70.6%)			
AR&R 100 year, 25 minutes storm, average 131 mm/h, Zone 1	2716.73	2271.74 (83.6%)	1243.32 (98.2%)	1028.42 (70.9%)			
AR&R 100 year, 30 minutes storm, average 120 mm/h, Zone 1	2986.33	2505.02 (83.9%)	1369.01 (98.3%)	1136.01 (71.3%)			
AR&R 100 year, 45 minutes storm, average 98 mm/h, Zone 1	3658.25	3087.79 (84.4%)	1682.25 (98.6%)	1405.54 (72.0%)			
AR&R 100 year, 1 hour storm, average 84 mm/h, Zone 1	4180.86	3540.60 (84.7%)	1925.89 (98.8%)	1614.71 (72.4%)			
AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1	4927.44	4177.39 (84.8%)	2273.95 (99.0%)	1903.44 (72.4%)			
AR&R 100 year, 2 hours storm, average 55 mm/h, Zone 1	5474.93	4633.85 (84.6%)	2529.14 (99.1%)	2104.71 (72.0%)			
AR&R 100 year, 3 hours storm, average 42.4 mm/h, Zone 1	6331.01	5327.85 (84.2%)	2928.26 (99.2%)	2399.59 (71.0%)			
AR&R 100 year, 4.5 hours storm, average 32.7 mm/h, Zone 1	7323.96	6107.71 (83.4%)	3391.13 (99.3%)	2716.58 (69.5%)			
PIPE DETAILS							
Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm		
ePipe1/6	0.07	0.64	11.63	11.624	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1		
P2/6	1.084	2.45	10.904	10.6	AR&R 100 year, 2 hours storm, average 55 mm/h, Zone 1		
Pipe 3/6	1.128	1.77	10.339	10.336	AR&R 100 year, 2 hours storm, average 55 mm/h, Zone 1		
ePipe C2	1.135	1.93	10.066	9.991	AR&R 100 year, 2 hours storm, average 55 mm/h, Zone 1		
ePipe C3	1.27	2.28	9.658	9.581	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1		
eP1/5	0.042	0.38	13.73	13.78	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1		
eP2/4	0.323	2.92	13.414	12.74	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1		
Pipe 3/4	0.448	2.07	12.385	12.347	AR&R 100 year, 25 minutes storm, average 131 mm/h, Zone 1		
Pipe 8/1	0.919	2.08	12.084	12.01	AR&R 100 year, 30 minutes storm, average 120 mm/h, Zone 1		
Pipe 9/1	0.967	2.19	11.848	11.624	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1		
eP1/3	0.051	0.46	12.46	12.46	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1		
Pipe 7/1	0.541	1.22	12.373	12.347	AR&R 100 year, 15 minutes storm, average 166 mm/h, Zone 1		
eP1/1	0.11	0.99	15.763	15.66	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1		
eP2/1	0.21	1.9	15.463	15.36	AR&R 100 year, 10 minutes storm, average 195 mm/h, Zone 1		
eP3/1	0.302	2.73	14.894	14.563	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1		
eP4/1	0.377	3.41	14.083	13.294	AR&R 100 year, 25 minutes storm, average 131 mm/h, Zone 1		
eP5/1	0.437	2.75	13.151	12.78	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1		
ePipe 6/1	0.383	2.41	12.655	12.46	AR&R 100 year, 1 hour storm, average 84 mm/h, Zone 1		
eP1/2	0.035	0.32	15.66	15.66	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1		
Pipe 1a/4	0.026	2.32	17.15	16.55	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1		
Pipe 1b/4	0.213	1.92	15.888	15.679	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1		
Pipe 1c/4	0.224	2.03	15.425	15.222	AR&R 100 year, 2 hours storm, average 55 mm/h, Zone 1		
eP1/4	0.31	2.81	14.82	13.78	AR&R 100 year, 2 hours storm, average 55 mm/h, Zone 1		

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Pipe 3a/4	0.057	1.65	16.322	16.259	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1			
Pipe 3b/4	0.081	4.59	15.967	14.317	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1			
Pipe 3c/4	0.103	2.75	14.099	13.781	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1			
Pipe 3d/4	0.131	3.8	13.391	12.74	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1			
Pipe OSD 1	0.071	1	16.467	16.411	AR&R 100 year, 15 minutes storm, average 166 mm/h, Zone 1			
Pipe OSD 2	0.03	3.98	13.549	12.74	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1			
Pipe OSD 3	0.032	0.46	12.79	12.78	AR&R 100 year, 3 hours storm, average 42.4 mm/h, Zone 1			
Pipe OSD 4	0.016	3.35	12.536	12.463	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1			
Pipe 6a/1	0.016	0.15	12.463	12.46	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1			
Pipe OSD 5	0.022	0.31	12.46	12.46	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1			
Pipe OSD 7	0.028	3.01	12.257	12.01	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1			
Pipe OSD 8	0.031	2.48	12.814	10.041	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1			
Pipe 6/7	0.158	0.73	10.002	9.991	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1			
Pipe OSD 9	0.036	3.73	12.803	10.041	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1			
Pipe OSD 6	0.008	2	10.531	10.328	AR&R 100 year, 3 hours storm, average 42.4 mm/h, Zone 1			
ePipe C1	0.008	0.02	10.328	10.336	AR&R 100 year, 3 hours storm, average 42.4 mm/h, Zone 1			
Pipe 3a/6	0.275	0.62	10.605	10.6	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1			
Pipe 1/7	0.022	2.53	12.94	11.944	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1			
Pipe 2/7	0.041	3.34	11.783	11.079	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1			
Pipe 3/7	0.05	2.1	10.93	10.646	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1			
Pipe 4/7	0.076	1.77	10.484	10.453	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1			
Pipe 5/7	0.095	1.89	10.264	10.192	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1			
OVERFLOW ROUTE DETAILS								
Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
OF 1/6	0.046	0.046	1.152	0.094	0.08	1.77	0.82	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF 2/6	0.046	0.046	7.665	0.026	0.01	8.83	0.4	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1
Dev OF	0.326	0.326	7.665	0.055	0.04	15.05	0.7	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1
OF C2	0	0	7.665	0	0	0	0	
OF C3	0	0	7.665	0	0	0	0	
OF 1/5	0.071	0.071	1.152	0.105	0.09	2.15	0.9	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF 2/4	0.035	0.035	1.152	0.088	0.07	1.56	0.76	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF 3/4	0.169	0.169	1.152	0.134	0.15	3.1	1.1	AR&R 100 year, 2 hours storm, average 55 mm/h, Zone 1
OF 8/1	0.068	0.068	1.152	0.105	0.09	2.13	0.88	AR&R 100 year, 2 hours storm, average 55 mm/h, Zone 1
OF 9/1	0.009	0.009	1.152	0.057	0.04	0.54	0.67	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF20	0.055	0.055	7.665	0.028	0.01	9.43	0.41	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1
OF 6b/1	0.215	0.215	7.665	0.047	0.03	13.43	0.61	AR&R 100 year, 1 hour storm, average 84 mm/h, Zone 1
OF 1/1	0.083	0.083	1.152	0.11	0.1	2.31	0.93	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF 2/1	0.159	0.159	1.152	0.132	0.14	3.03	1.08	AR&R 100 year, 25 minutes storm, average 131 mm/h, Zone 1
OF 3/1	0.146	0.146	1.152	0.128	0.14	2.92	1.06	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1
OF 4/1	0.082	0.082	1.152	0.11	0.1	2.31	0.92	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1
OF 5/1	0.018	0.018	1.152	0.073	0.05	1.06	0.68	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1
OF 6/1	0.285	0.285	1.152	0.158	0.19	4.28	1.19	AR&R 100 year, 2 hours storm, average 55 mm/h, Zone 1
OF 1/2	0.04	0.04	1.152	0.091	0.07	1.68	0.78	AR&R 100 year, 25 minutes storm, average 131 mm/h, Zone 1
OF 1a/4	0.001	0.001	1.152	0.021	0.01	0.18	0.37	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
OF 1b/4	0.068	0.068	1.152	0.105	0.09	2.13	0.88	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF 1c/4	0.01	0.01	1.152	0.059	0.04	0.61	0.66	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF 1/4	0.094	0.094	1.152	0.114	0.11	2.44	0.95	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF 3a/4	0.006	0.006	1.152	0.047	0.03	0.39	0.64	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
OF 3b/4	0	0	1.152	0	0	0	0	
OF 3c/4	0	0	1.152	0	0	0	0	
OF 3d/4	0.001	0.001	1.152	0.024	0.01	0.19	0.4	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
OF OSD 1	0.217	0.217	7.665	0.047	0.03	13.43	0.62	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF OSD 2	0.093	0.093	7.665	0.034	0.02	10.74	0.49	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF OSD 3	0.095	0.095	7.665	0.035	0.02	10.91	0.48	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF OSD 4	0.05	0.05	7.665	0.027	0.01	9.13	0.4	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF 6a/1	0.225	0.225	4.97	0.044	0.03	8.3	0.62	AR&R 100 year, 1 hour storm, average 84 mm/h, Zone 1
OF OSD 5	0.045	0.045	7.665	0.026	0.01	8.83	0.39	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF OSD 7	0.069	0.069	7.665	0.031	0.01	10.2	0.43	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF OSD 8	0.094	0.094	7.665	0.035	0.02	10.91	0.48	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF 6/7	0.205	0.205	7.665	0.045	0.03	13.07	0.63	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF OSD 9	0.11	0.11	7.665	0.036	0.02	11.27	0.51	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
DEV OF2	0.366	0.366	7.665	0.058	0.04	15.58	0.72	AR&R 100 year, 1 hour storm, average 84 mm/h, Zone 1
OF OSD 6	0.023	0.023	7.665	0.02	0.01	6.74	0.34	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF C1	0	0	7.665	0	0	0	0	

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OF 3a/6	0.126	0.126	7.665	0.038	0.02	11.63	0.53	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF 1/7	0	0	7.665	0	0	0	0	
OF 2/7	0	0	7.665	0	0	0	0	
OF 3/7	0	0	7.665	0	0	0	0	
OF 4/7	0	0	7.665	0	0	0	0	
OF 5/7	0	0	7.665	0	0	0	0	
DETENTION BASIN DETAILS								
Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level			
OSD 1	17.59	106.1	0.287	0.071	0.217			
OSD 2	16.05	41.4	0.123	0.03	0.093			
OSD 3	15.05	42.4	0.127	0.032	0.095			
OSD 4	13.53	26	0.066	0.016	0.05			
OSD 5	12.38	63.1	0.067	0.022	0.045			
OSD 7	13.04	39	0.097	0.028	0.069			
OSD 8	15.3	43.9	0.125	0.031	0.094			
OSD 9	15.31	49.7	0.146	0.036	0.11			
OSD 6	11.54	13.7	0.031	0.008	0.023			
Upwelling occurred at Pit 3/6, ePit1/2, ePit6/1, ePit1/3, ePit3/4, ePit1/5								
Freeboard was less than 0.15m at Pit 3a/6, ePit2/1, ePit3/1, ePit4/1, ePit5/1, ePit7/1, ePit2/4, ePit1/4, ePit2/6, ePit1/6								

100 YEAR RESULTS