

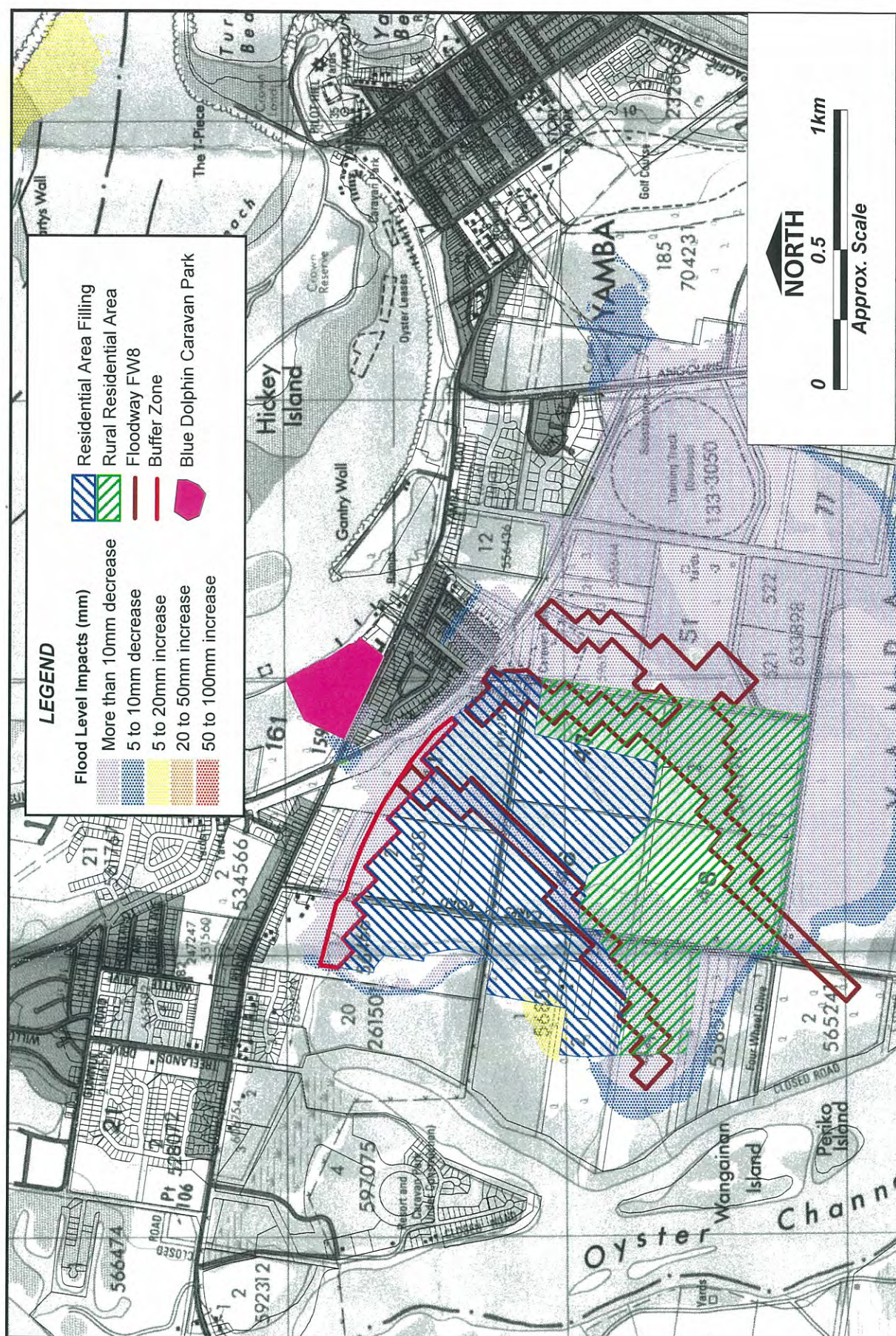


Figure 6

Appendix E

Detailed Water Balances

DOLPHIN BLUE - WATER BALANCE
WATER REUSE STORAGE FOR RESIDENTIAL ACCOMMODATION

Roof Area	12,800	sqm
Irrigation	5,000	sqm
Toilet Flushing Demand (Winter)	396	cum
Toilet Flushing Demand (Summer)	594	cum
Tank Surface Area	0	sqm
Maximum % take	90	%

RAINFALL DATA

Rainfall	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Median Rainfall	107.7	136.2	164.9	137.1	125.3	106.5	65.6	57.2	42.9	67.1	73.6	102.4
Rain Days per Month	12	13	15	13	12	10	9	8	8	9	10	11
Rain Periods per Month	4	4	5	4	4	3	3	3	3	3	3	4

IRRIGATION REQUIREMENTS

Irrigation Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Turfed Area	7	3	1	4	7	10	13	15	14	13	10	9

Non Irrigation Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Turfed Area	24	26	30	26	24	20	18	16	16	18	20	22
Irrigation Period	Peak		Shoulder		Low			Shoulder		Peak		
Water Demand for Turfed Area (mm/day)	3.8	3.8	1.9	1.9	1.5	1.5	1.5	1.9	1.9	3.8	3.8	3.8

Irrigation Required (mm)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Turfed Area	26.6	11.4	1.9	7.6	10.5	15.0	19.5	28.5	26.6	49.4	38.0	34.2

Irrigation Volume Required (cum)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Turfed Area	133.0	57.0	9.5	38.0	52.5	75.0	97.5	142.5	133.0	247.0	190.0	171.0
Total	133.0	57.0	9.5	38.0	52.5	75.0	97.5	142.5	133.0	247.0	190.0	171.0

Irrigation Volume Available (cum)	1240.7	1569.0	1899.6	1579.4	1443.5	1226.9	755.7	658.9	494.2	773.0	847.9	1179.6
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Irrigation Volume Surplus (cum)	1107.7	1512.0	1890.1	1541.4	1391.0	1151.9	658.2	516.4	361.2	526.0	657.9	1008.6
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MAXIMUM TANK VOLUME REQUIRED (cum)

Tank capacity	110.0	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tank Start Volume (cum)	0.0	0.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	75.2	7.2	71.1
Tank Inflow (cum/month)		1240.7	1569.0	1899.6	1579.4	1443.5	1226.9	755.7	658.9	494.2	773.0	847.9	1179.6
Tank Usage Landscape (cum/month)		133.0	57.0	9.5	38.0	52.5	75.0	97.5	142.5	133.0	247.0	190.0	171.0
Tank Usage Toilets(cum/month)		594.0	594.0	594.0	396.0	396.0	396.0	396.0	396.0	396.0	594.0	594.0	594.0
Evaporation loss (cum/month)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tank Balance (cum/month)		513.7	918.0	1296.1	1145.4	995.0	755.9	262.2	120.4	-34.8	-68.0	63.9	414.6
Tank Finish Volume (cum)		110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	75.2	7.2	71.1	110.0
Tank Overflow (cum/month)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
External Sourcing (cum/month)		No	No	No	No	No	No	No	No	No	No	No	No

DOLPHIN BLUE - WATER BALANCE
WATER REUSE STORAGE FOR RESIDENTIAL ACCOMMODATION

Roof Area	2,800	sqm
Irrigation	1,000	sqm
Toilet Flushing Demand (Winter)	100	cum
Toilet Flushing Demand (Summer)	150	cum
Tank Surface Area	0	sqm
Maximum % take	90	%

RAINFALL DATA

Rainfall	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Median Rainfall	107.7	136.2	164.9	137.1	125.3	106.5	65.6	57.2	42.9	67.1	73.6	102.4
Rain Days per Month	12	13	15	13	12	10	9	8	8	9	10	11
Rain Periods per Month	4	4	5	4	4	3	3	3	3	3	3	4

IRRIGATION REQUIREMENTS

Irrigation Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Turfed Area	7	3	1	4	7	10	13	15	14	13	10	9

Non Irrigation Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Turfed Area	24	26	30	26	24	20	18	16	16	18	20	22
Irrigation Period	Peak		Shoulder		Low			Shoulder		Peak		
Water Demand for Turfed Area (mm/day)	3.8	3.8	1.9	1.9	1.5	1.5	1.5	1.9	1.9	3.8	3.8	3.8

Irrigation Required (mm)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Turfed Area	26.6	11.4	1.9	7.6	10.5	15.0	19.5	28.5	26.6	49.4	38.0	34.2

Irrigation Volume Required (cum)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Turfed Area	26.6	11.4	1.9	7.6	10.5	15.0	19.5	28.5	26.6	49.4	38.0	34.2
Total	26.6	11.4	1.9	7.6	10.5	15.0	19.5	28.5	26.6	49.4	38.0	34.2

Irrigation Volume Available (cum)	271.4	343.2	415.5	345.5	315.8	268.4	165.3	144.1	108.1	169.1	185.5	258.0
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Irrigation Volume Surplus (cum)	244.8	331.8	413.6	337.9	305.3	253.4	145.8	115.6	81.5	119.7	147.5	223.8
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MAXIMUM TANK VOLUME REQUIRED (cum)

Tank capacity	60.0	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tank Start Volume (cum)	0.0	0.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	41.5	11.2	8.7
Tank Inflow (cum/month)		271.4	343.2	415.5	345.5	315.8	268.4	165.3	144.1	108.1	169.1	185.5	258.0
Tank Usage Landscape (cum/month)		26.6	11.4	1.9	7.6	10.5	15.0	19.5	28.5	26.6	49.4	38.0	34.2
Tank Usage Toilets(cum/month)		150.0	150.0	150.0	150.0	100.0	100.0	100.0	100.0	100.0	150.0	150.0	150.0
Evaporation loss (cum/month)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tank Balance (cum/month)		94.8	181.8	263.6	187.9	205.3	153.4	45.8	15.6	-18.5	-30.3	-2.5	73.8
Tank Finish Volume (cum)		60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	41.5	11.2	8.7	60.0
Tank Overflow (cum/month)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
External Sourcing (cum/month)		No	No	No	No	No	No	No	No	No	No	No	No

DOLPHIN BLUE - WATER BALANCE
WATER REUSE STORAGE FOR HOTEL ACCOMMODATION

Roof Area	8,000	sqm
Irrigation	4,000	sqm
Toilet Flushing Demand (Winter)	223	cum
Toilet Flushing Demand (Summer)	334	cum
Surface Area	0	sqm
Maximum % take	90	%

RAINFALL DATA

Rainfall	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Median Rainfall	107.7	136.2	164.9	137.1	125.3	106.5	65.6	57.2	42.9	67.1	73.6	102.4
Rain Days per Month	12	13	15	13	12	10	9	8	8	9	10	11
Rain Periods per Month	4	4	5	4	4	3	3	3	3	3	3	4

IRRIGATION REQUIREMENTS

Irrigation Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Turfed Area	7	3	1	4	7	10	13	15	14	13	10	9

Non Irrigation Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Turfed Area	24	26	30	26	24	20	18	16	16	18	20	22
Irrigation Period	Peak		Shoulder		Low			Shoulder		Peak		
Water Demand for Turfed Area (mm/day)	3.8	3.8	1.9	1.9	1.5	1.5	1.5	1.9	1.9	3.8	3.8	3.8

Irrigation Required (mm)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Turfed Area	26.6	11.4	1.9	7.6	10.5	15.0	19.5	28.5	26.6	49.4	38.0	34.2

Irrigation Volume Required (cum)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Turfed Area	106.4	45.6	7.6	30.4	42.0	60.0	78.0	114.0	106.4	197.6	152.0	136.8
Total	106.4	45.6	7.6	30.4	42.0	60.0	78.0	114.0	106.4	197.6	152.0	136.8

Irrigation Volume Available (cum)	775.4	980.6	1187.3	987.1	902.2	766.8	472.3	411.8	308.9	483.1	529.9	737.3
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Irrigation Volume Surplus (cum)	669.0	935.0	1179.7	956.7	860.2	706.8	394.3	297.8	202.5	285.5	377.9	600.5
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MAXIMUM TANK VOLUME REQUIRED (cum)

Tank capacity	70.0	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tank Start Volume (cum)	0.0	0.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	49.5	1.0	44.9
Tank Inflow (cum/month)		775.4	980.6	1187.3	987.1	902.2	766.8	472.3	411.8	308.9	483.1	529.9	737.3
Tank Usage Landscape (cum/month)		106.4	45.6	7.6	30.4	42.0	60.0	78.0	114.0	106.4	197.6	152.0	136.8
Tank Usage Toilets(cum/month)		334.0	334.0	334.0	223.0	223.0	223.0	223.0	223.0	223.0	334.0	334.0	334.0
Evaporation loss (cum/month)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tank Balance (cum/month)		335.0	601.0	845.7	733.7	637.2	483.8	171.3	74.8	-20.5	-48.5	43.9	266.5
Tank Finish Volume (cum)		70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	49.5	1.0	44.9	70.0
Tank Overflow (cum/month)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
External Sourcing (cum/month)		No	No	No	No	No	No	No	No	No	No	No	No