Table 5 – Results of the MUSIC evaluation of the various treatment measures for a trial Subcatchment.

Treatment performance	OSD basin with rain garden	OSD basin with pond	OSD basin with wetland
% removal TSS	94.8	85.3	73.6
%removal TP	76.6	62.5	52.5
% removal TN	54.3	38.2	39.9

Ponds

While constructed ponds were found to be not very effective in meeting the required pollutant reduction targets compared to rain gardens when fitted into the base on the OSD basin, they could more effective when combined with stormwater harvesting.

Ku-ring-gai Council's DCP 47 focuses on stormwater reuse and Council's submission to the DG requirements requires that a significant portion of harvested stormwater is used for open space irrigation. As such, the option of using ponds in association with stormwater harvesting was investigated as part of this study.

OSD basins close to the designated areas of public open space were assumed to be fitted with ponds to be used for stormwater treatment and reuse for irrigation of the public open space as shown in Drawing SKC008. This option was investigated using the MUSIC model for the site and was found to result in meeting the required treatment standard. Typical cross section of this arrangement is presented in Drawing SKC009.

The main design parameters for the proposed pond system used in the MUSIC model for this option site are presented in Appendix A Table A3.

On site Stormwater Management Measures

On areas where the subcatchment is small or where there is no sufficient space for ponds or rain gardens, other stormwater measures shall be used, such as underground detention tanks and rainwater tanks.

For the purpose of the water quality modelling of this report, only rain water tanks were considered for these areas.

4.3 MUSIC modelling results for the whole site.

The results for the two investigated options are presented in Table 6 below. These options involve the following:

- Option 1 involves fitting rain gardens to all OSD basins on the site and is presented in Drawing SKC007.

- Option 2 is similar to Option 1 but with fitting ponds to the OSD basins where public open space is located, to be harvested for irrigation of the public open space and is presented in Drawing SKC008.

The results indicate that both options meet the pollutant reduction targets of the site.

Table 6 – Results of the MUSIC model for the whole site

Catchment	% removal for Option 1			% removal for Option 2		
	TSS	TP	TN	TSS	TP	TN
Coups Creek (CC)	91.3	71.0	50.5	87.9	66.7	45.8
Lane Cove River (LC)	54.9	26.5	19.2	54.9	26.5	19.2
Fox Valley (FV1)	89.8	69.4	49.4	89.8	69.4	49.4
Full Site	88.5	67.6	48.2	86.5	65.1	45.3

Although the pollutant reduction targets of the site are met; there is a small portion of the site drains to the Lane Cove River (LC) and is not being treated at this stage. This portion of the site represents a very small fraction of the Lane cover River catchment.

4.4 Sewer mining

Sewer mining involves extracting sewage from the sewerage system running through or near the site, treating it to the required standard for reuse, distributing the treated effluent and the return of excess effluent and/or waste to the sewerage system. This concept can be utilised in the site to supply recycled water for a variety of uses such as irrigation of public open space and other non-potable uses within the development such as toilet flushing, wash down and clothes washing. The cost effectiveness of this option, however, is dependent on the costs associated with upgrading the current sewerage system to cater for the proposed development and increase in density. At this stage, this information is currently unavailable and this option can be re-assessed once Sydney Water provide their assessment in relation to the costs associated with upgrading the sewerage system within the site (or downstream of the site) to cater for the proposed development.

4.5 Conclusions

a Rainwater tank volumes and reuse should be provided for the various development types proposed at the site. The required rainwater tank volumes are presented in Table 4.

b OSD basins are required to control peak stormwater runoff from the site to acceptable levels. The location and size of these basins are presented in Drawing SKC007. The provided rainwater tank volumes

could be used to offset some of the required OSD volumes but this has to be confirmed with Ku-ring-gai Council.

c Rain gardens fitted into the base of the OSD basins were found to be the most effective means to meet the pollutant reduction targets for the proposed development.

d Ku-ring-gai Council's submission to the DG requirements requires that a significant portion of harvested stormwater is used for open space irrigation. This can be achieved by fitting ponds to the base of the OSD basins close to the designated areas of public open space to be used for stormwater treatment and reuse for irrigation of the public open space as shown in Drawing SKC008. This option also meets the pollutant reduction targets for the proposed development.

e Sewer mining to supply recycled water for non-potable use within the site such as irrigation, toilet flushing and washdown can be investigated once Sydney Water provide their assessment in relation to the costs associated with upgrading the sewerage system within the site (or downstream of the site) to cater for the proposed development.

4.6 Statement of Commitments

Issue	Mitigation Measure
Drainage site discharge	Installation of on-site detention basins in all catchments to control the site discharge according to the Council DCP47 requirements. The basins shall be usually above ground with a maximum depth of 1.20m. Where there is no space available for above ground basins, underground tanks shall be installed.
Water conservation	Rainwater tanks shall be installed in all new dwellings houses, medium density residential, high density residential, commercial and retail buildings. Stormwater harvesting shall be used to irrigate public open space where possible.
Water quality	A number of rain gardens and ponds will be constructed in the site to capture and treat stormwater flows from regular rainfall to the reduction targets set by Council's DCP 47. These WSUD measures will be usually combined with the basins.

Appendix A

MUSIC Model Parameters and Results

Table A1: Adopted Rainfall-Runoff MUSIC model parameters

Property	Default Parameters
Impervious Area Properties	
Rainfall Threshold (mm/day)	1
Pervious Area Properties	
Soil Storage Capacity (mm)	200
Initial Storage (% of Capacity)	30
Field Capacity (mm)	170
Infiltration Capacity Coefficient- a	200
Infiltration Capacity Coefficient- b	1
Groundwater Properties	
Initial Depth (mm)	10
Daily Recharge Rate (%)	25
Daily Base flow Rate (%)	5
Daily Deep Seepage Rate (%)	0

Table A2: Adopted bio-retention MUSIC model parameters

Parameter	Value
Extended detention depth (m)	0.3
Filter depth (m)	0.7
Filter median particle (mm)	0.7
Saturated hydraulic conductivity for filter media (mm/hr)	180
Weir coefficient	1.7
Voids ratio	0.3
No. of CSTR cells	3
K (m/yr) for TSS	1000
C* (mg/L) for TSS	12
K (m/yr) for TP	500
C* (mg/L) for TP	0.13
K (m/yr) for TN	50
C* (mg/L) for TN	1.3

Table A3: Adopted Pond design parameters for the MUSIC

Parameter	Value
Extended Detention Depth (m)	0.30
Seepage (mm/hr)	0.00
Evaporative Loss as % of PET	100
No. of CSTR cells	2
K (m/yr) for TSS	600
C* (mg/L) for TSS	13.5
K (m/yr) for TP	325
C* (mg/L) for TP	0.09
K (m/yr) for TN	40
C* (mg/L) for TN	1.0

Table A4: MUSIC Model Results – Option 1

Option 1	Sources	Residual Load	%Reduction
Catchment 1			
Flow (ML/yr)	9.83	9.32	5.2
Total Suspended Solids (kg/yr)	1520	770	49.5
Total Phosphorus (kg/yr)	3.44	2.83	17.7
Total Nitrogen (kg/yr)	25.7	22.1	14.2
Gross Pollutants (kg/yr)	250	0	100
Catchment 2			
Flow (ML/yr)	35.4	33.2	6.1
Total Suspended Solids (kg/yr)	5470	302	94.5
Total Phosphorus (kg/yr)	12.4	3.21	74
Total Nitrogen (kg/yr)	92.6	44.4	52
Gross Pollutants (kg/yr)	899	0	100
Catchment 3			
Flow (ML/yr)	21.2	19.6	7.3
Total Suspended Solids (kg/yr)	3260	176	94.6
Total Phosphorus (kg/yr)	7.38	1.83	75.1
Total Nitrogen (kg/yr)	55.4	26.1	52.9
Gross Pollutants (kg/yr)	538	0	100
Catchment 4			
Flow (ML/yr)	38.3	35.1	8.3
Total Suspended Solids (kg/yr)	5850	307	94.8
Total Phosphorus (kg/yr)	13.3	3.32	75
Total Nitrogen (kg/yr)	99.9	46.4	53.6
Gross Pollutants (kg/yr)	976	0	100
Catchment 5			
Flow (ML/yr)	28.6	25.9	9.3
Total Suspended Solids (kg/yr)	4350	233	94.6
Total Phosphorus (kg/yr)	9.88	2.42	75.5
Total Nitrogen (kg/yr)	74.4	34.2	54
Gross Pollutants (kg/yr)	728	0	100
Catchment 6			
Flow (ML/yr)	5.92	5.37	9.3
Total Suspended Solids (kg/yr)	901	58.5	93.5
Total Phosphorus (kg/yr)	2.05	0.537	73.8
Total Nitrogen (kg/yr)	15.4	7.3	52.7
Gross Pollutants (kg/yr)	151	0	100

Catchment 7			
Flow (ML/yr)	22.9	20.8	9.3
Total Suspended Solids (kg/yr)	3490	159	95.5
Total Phosphorus (kg/yr)	7.94	1.86	76.6
Total Nitrogen (kg/yr)	59.8	26.8	55.2
Gross Pollutants (kg/yr)	585	0	100
Catchment 8			
Flow (ML/yr)	17.3	15.7	9.2
Total Suspended Solids (kg/yr)	2630	1190	54.9
Total Phosphorus (kg/yr)	5.99	4.4	26.5
Total Nitrogen (kg/yr)	45.1	36.5	19.2
Gross Pollutants (kg/yr)	441	0	100
Catchment 9			
Flow (ML/yr)	26.1	24	8.4
Total Suspended Solids (kg/yr)	4080	211	94.8
Total Phosphorus (kg/yr)	9.18	2.33	74.6
Total Nitrogen (kg/yr)	68.5	32	53.2
Gross Pollutants (kg/yr)	686	0	100
Catchment 10			
Flow (ML/yr)	35.4	32.3	8.7
Total Suspended Solids (kg/yr)	5500	269	95.1
Total Phosphorus (kg/yr)	12.4	3.03	75.5
Total Nitrogen (kg/yr)	92.7	42.7	53.9
Gross Pollutants (kg/yr)	932	0	100
Catchment 11			
Flow (ML/yr)	22.2	19.8	11.1
Total Suspended Solids (kg/yr)	3450	458	86.7
Total Phosphorus (kg/yr)	7.78	2.5	67.9
Total Nitrogen (kg/yr)	58.2	30.2	48
Gross Pollutants (kg/yr)	582	25.7	95.6
Catchment 12			
Flow (ML/yr)	6.57	6.22	5.4
Total Suspended Solids (kg/yr)	1010	489	51.6
Total Phosphorus (kg/yr)	2.29	1.82	20.3
Total Nitrogen (kg/yr)	17.2	14.6	14.7
Gross Pollutants (kg/yr)	167	0	100
Catchment 13			
Flow (ML/yr)	2.05	1.9	7.3
Total Suspended Solids (kg/yr)	315	188	40.3
Total Phosphorus (kg/yr)	0.713	0.536	24.8
Total Nitrogen (kg/yr)	5.35	4.73	11.6
Gross Pollutants (kg/yr)	52	15.8	69.6

Catchment 14			
Flow (ML/yr)	3.26	2.98	8.6
Total Suspended Solids (kg/yr)	502	289	42.4
Total Phosphorus (kg/yr)	1.14	0.833	26.7
Total Nitrogen (kg/yr)	8.53	7.4	13.2
Gross Pollutants (kg/yr)	83.1	25.7	69.1
Fox Valley			
Flow (ML/yr)	90.3	82.2	8.9
Total Suspended Solids (kg/yr)	14000	1430	89.8
Total Phosphorus (kg/yr)	31.7	9.69	69.4
Total Nitrogen (kg/yr)	237	120	49.4
Gross Pollutants (kg/yr)	2.37E+03	25.7	98.9
Coups Creek			
Flow (ML/yr)	164	151	7.9
Total Suspended Solids (kg/yr)	25200	2190	91.3
Total Phosphorus (kg/yr)	57.1	16.6	71
Total Nitrogen (kg/yr)	429	212	50.5
Gross Pollutants (kg/yr)	4.18E+03	15.8	99.6
Lane Cove River			
Flow (ML/yr)	17.3	15.7	9.2
Total Suspended Solids (kg/yr)	2630	1190	54.9
Total Phosphorus (kg/yr)	5.99	4.4	26.5
Total Nitrogen (kg/yr)	45.1	36.5	19.2
Gross Pollutants (kg/yr)	441	0	100
Whole Site			
Flow (ML/yr)	272	249	8.3
Total Suspended Solids (kg/yr)	41800	4810	88.5
Total Phosphorus (kg/yr)	94.7	30.6	67.6
Total Nitrogen (kg/yr)	710	368	48.2
Gross Pollutants (kg/yr)	6.99E+03	41.5	99.4

Table A5: MUSIC Model Results – Option 2

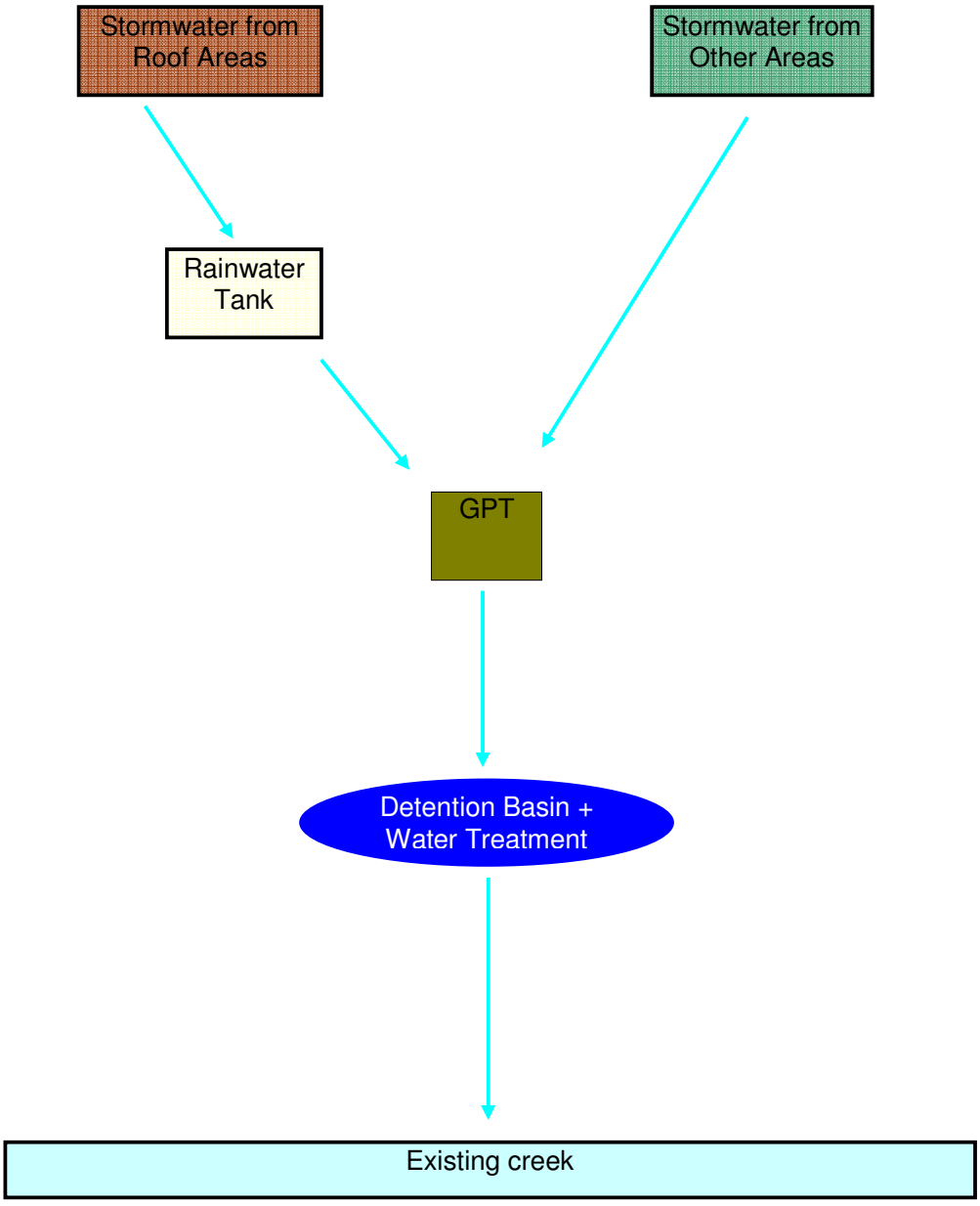
Option 2	Sources	Residual Load	%Reduction
Catchment 1			
Flow (ML/yr)	9.83	9.32	5.2
Total Suspended Solids (kg/yr)	1.52E+03	770	49.5
Total Phosphorus (kg/yr)	3.44	2.83	17.7
Total Nitrogen (kg/yr)	25.7	22.1	14.2
Gross Pollutants (kg/yr)	250	0	100
Catchment 2			
Flow (ML/yr)	35.4	33.2	6.1
Total Suspended Solids (kg/yr)	5.47E+03	302	94.5
Total Phosphorus (kg/yr)	12.4	3.21	74
Total Nitrogen (kg/yr)	92.6	44.4	52
Gross Pollutants (kg/yr)	899	0	100
Catchment 3			
Flow (ML/yr)	21.2	17.4	18.1
Total Suspended Solids (kg/yr)	3.26E+03	484	85.2
Total Phosphorus (kg/yr)	7.38	2.73	63
Total Nitrogen (kg/yr)	55.4	33.1	40.2
Gross Pollutants (kg/yr)	538	0	100
Catchment 4			
Flow (ML/yr)	38.3	32.2	16
Total Suspended Solids (kg/yr)	5.85E+03	854	85.4
Total Phosphorus (kg/yr)	13.3	4.88	63.3
Total Nitrogen (kg/yr)	99.9	59.6	40.4
Gross Pollutants (kg/yr)	976	0	100
Catchment 5			
Flow (ML/yr)	28.6	25.9	9.3
Total Suspended Solids (kg/yr)	4.35E+03	233	94.6
Total Phosphorus (kg/yr)	9.88	2.42	75.5
Total Nitrogen (kg/yr)	74.4	34.2	54
Gross Pollutants (kg/yr)	728	0	100
Catchment 6			
Flow (ML/yr)	5.92	5.37	9.3
Total Suspended Solids (kg/yr)	901	58.5	93.5
Total Phosphorus (kg/yr)	2.05	0.537	73.8
Total Nitrogen (kg/yr)	15.4	7.3	52.7
Gross Pollutants (kg/yr)	151	0	100

Catchment 7			
Flow (ML/yr)	22.9	20.8	9.3
Total Suspended Solids (kg/yr)	3.49E+03	159	95.5
Total Phosphorus (kg/yr)	7.94	1.86	76.6
Total Nitrogen (kg/yr)	59.8	26.8	55.2
Gross Pollutants (kg/yr)	585	0	100
Catchment 8			
Flow (ML/yr)	17.3	15.7	9.2
Total Suspended Solids (kg/yr)	2.63E+03	1.19E+03	54.9
Total Phosphorus (kg/yr)	5.99	4.4	26.5
Total Nitrogen (kg/yr)	45.1	36.5	19.2
Gross Pollutants (kg/yr)	441	0	100
Catchment 9			
Flow (ML/yr)	26.1	24	8.4
Total Suspended Solids (kg/yr)	4.08E+03	211	94.8
Total Phosphorus (kg/yr)	9.18	2.33	74.6
Total Nitrogen (kg/yr)	68.5	32	53.2
Gross Pollutants (kg/yr)	686	0	100
Catchment 10			
Flow (ML/yr)	35.4	32.3	8.7
Total Suspended Solids (kg/yr)	5.50E+03	269	95.1
Total Phosphorus (kg/yr)	12.4	3.03	75.5
Total Nitrogen (kg/yr)	92.7	42.7	53.9
Gross Pollutants (kg/yr)	932	0	100
Catchment 11			
Flow (ML/yr)	22.2	19.8	11.1
Total Suspended Solids (kg/yr)	3.45E+03	458	86.7
Total Phosphorus (kg/yr)	7.78	2.5	67.9
Total Nitrogen (kg/yr)	58.2	30.2	48
Gross Pollutants (kg/yr)	582	25.7	95.6
Catchment 12			
Flow (ML/yr)	6.57	6.22	5.4
Total Suspended Solids (kg/yr)	1.01E+03	489	51.6
Total Phosphorus (kg/yr)	2.29	1.82	20.3
Total Nitrogen (kg/yr)	17.2	14.6	14.7
Gross Pollutants (kg/yr)	167	0	100
Catchment 13			
Flow (ML/yr)	2.05	1.9	7.3
Total Suspended Solids (kg/yr)	315	188	40.3
Total Phosphorus (kg/yr)	0.713	0.536	24.8
Total Nitrogen (kg/yr)	5.35	4.73	11.6
Gross Pollutants (kg/yr)	52	15.8	69.6

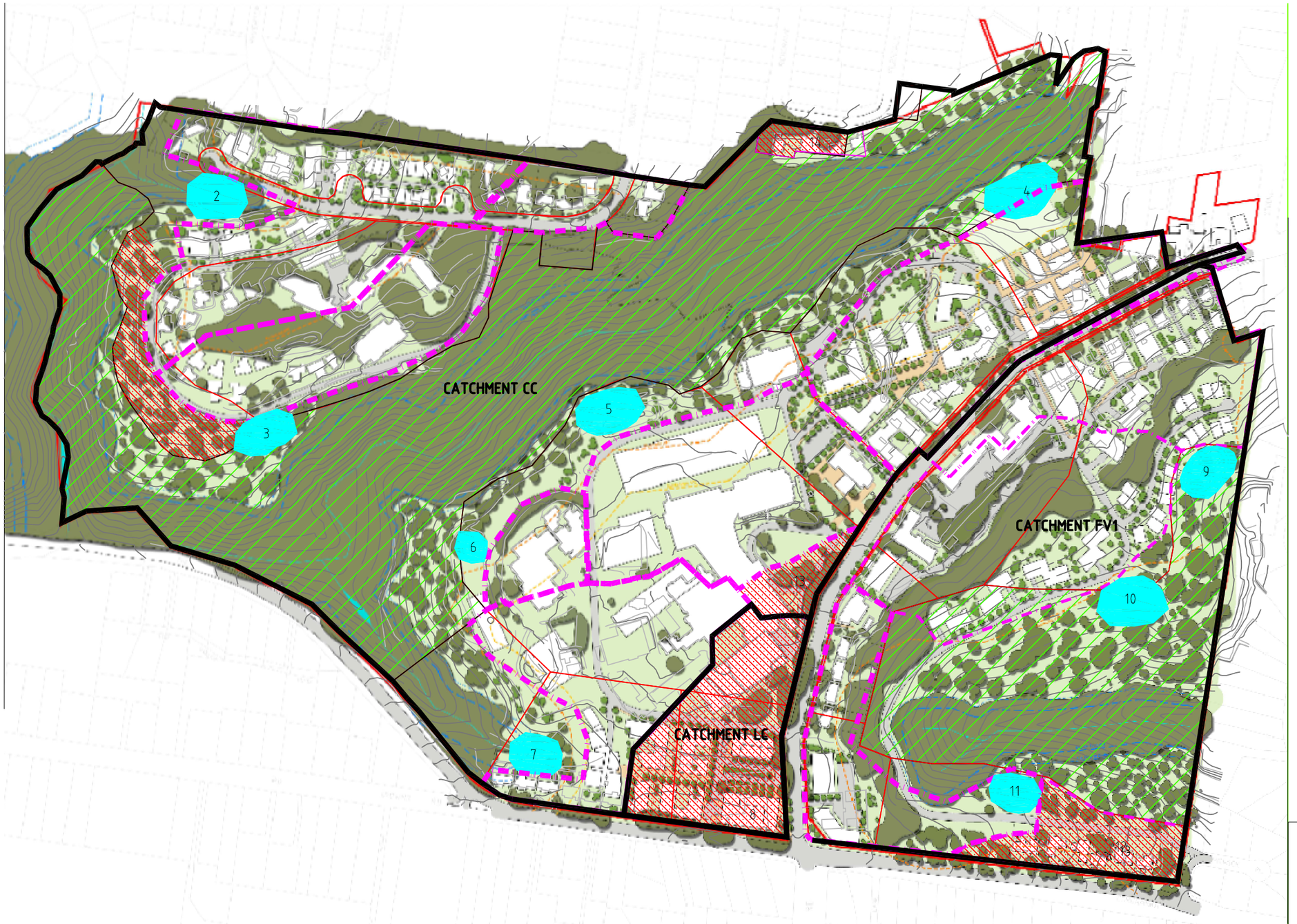
Catchment 14			
Flow (ML/yr)	3.26	2.98	8.6
Total Suspended Solids (kg/yr)	502	289	42.4
Total Phosphorus (kg/yr)	1.14	0.833	26.7
Total Nitrogen (kg/yr)	8.53	7.4	13.2
Gross Pollutants (kg/yr)	83.1	25.7	69.1
Fox Valley			
Flow (ML/yr)	90.3	82.2	8.9
Total Suspended Solids (kg/yr)	1.40E+04	1.43E+03	89.8
Total Phosphorus (kg/yr)	31.7	9.69	69.4
Total Nitrogen (kg/yr)	237	120	49.4
Gross Pollutants (kg/yr)	2.37E+03	25.7	98.9
Coups Creek			
Flow (ML/yr)	164	146	11
Total Suspended Solids (kg/yr)	2.52E+04	3.05E+03	87.9
Total Phosphorus (kg/yr)	57.1	19	66.7
Total Nitrogen (kg/yr)	429	232	45.8
Gross Pollutants (kg/yr)	4.18E+03	15.8	99.6
Lane Cove River			
Flow (ML/yr)	17.3	15.7	9.2
Total Suspended Solids (kg/yr)	2.63E+03	1.19E+03	54.9
Total Phosphorus (kg/yr)	5.99	4.4	26.5
Total Nitrogen (kg/yr)	45.1	36.5	19.2
Gross Pollutants (kg/yr)	441	0	100
Whole Site			
Flow (ML/yr)	272	244	10.2
Total Suspended Solids (kg/yr)	4.18E+04	5.66E+03	86.5
Total Phosphorus (kg/yr)	94.7	33.1	65.1
Total Nitrogen (kg/yr)	710	388	45.3
Gross Pollutants (kg/yr)	6.99E+03	41.5	99.4

Appendix B

Stormwater Diagram


Stormwater from Roof Areas
Stormwater from Other Areas
Rainwater Tank
GPT
Detention Basin + Water Treatment
Existing creek

BASIN No:	AREA (sq.m)
2	2000
3	1785
4	2545
5	2150
6	745
7	1570
9	1850
10	2430
11	1405



LEGEND

- 10 — COMBINED ON-SITE DETENTION BASIN AND WATER TREATMENT DEVICE
- ON-SITE STORMWATER MANAGEMENT MEASURES
- SUBCATCHMENT BOUNDARY
- CATCHMENT BOUNDARY
- PRECINCT BOUNDARY

NOTES:
1- THE OSD BASIN WAS SIZED ASSUMING NO DEDUCTION IN VOLUME FOR PROVIDING RAIWATER TANKS IN THE SUBCATCHMENTS
2- SUBCATCHMENTS WITHOUT BASINS ARE ASSUMED TO HAVE THEIR OWN WATER QUALITY AND OSD CONTROL MEASURES RESOLVED AT DA STAGE
3- FOR DETENTION BASIN TYPICAL SECTION, SEE SKC009 AND SKC010

Issue	Description	Drwn	Ckd.	Appd.	Date
P1	ISSUE FOR INFORMATION	GP	GI	GI	27.11.08

0 50 100 150 200m
1 : 2000 (A1)
100 200 300
1 : 4000 (A3)

100mm On Original A1

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Client: JOHNSON PROPERTY GROUP

Project: WAHROONGA ESTATE PRECINCT PLAN

Title: DETENTION BASINS PLAN

Scale (A1): 1:2000 | Datum: AHD
Drawn: GP | Designed: GP

Hyder Consulting
HYDER CONSULTING PTY LTD
Level 5
141 Walker St
North Sydney, NSW, 2060
ABN 76 104 485 289
Tel: +61 (0)2 8907 9000
Fax: +61 (0)2 8907 9001

Project Code	Drawing No.	Issue
AA001545	SKC007	P1

BASIN No:	AREA (sq.m)
2	2000
3	1785
4	2545
5	2150
6	745
7	1570
9	1850
10	2430
11	1405

LEGEND

- CATCHMENT WITH OPEN AREA TO BE IRRIGATED WITH HARVESTED STORMWATER
- 10 COMBINED ON-SITE DETENTION BASIN AND RAIN GARDEN TREATMENT SYSTEM
- 10 COMBINED ON-SITE DETENTION BASIN AND POND TREATMENT/REUSE SYSTEM
- ON-SITE STORMWATER MANAGEMENT MEASURES
- SUBCATCHMENT BOUNDARY
- CATCHMENT BOUNDARY
- PRECINCT BOUNDARY

NOTE:
FOR DETENTION BASIN TYPICAL SECTION, SEE SKC009 AND SKC010

100mm On Original A1

Issue	Description	Drwn	Ckd.	Appd.	Date
P1	ISSUE FOR INFORMATION	GP	GI	GI	27.11.08

0 50 100 150 200m
1 : 2000 (A1)

100 200 300
1 : 4000 (A3)

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Client: JOHNSON PROPERTY GROUP

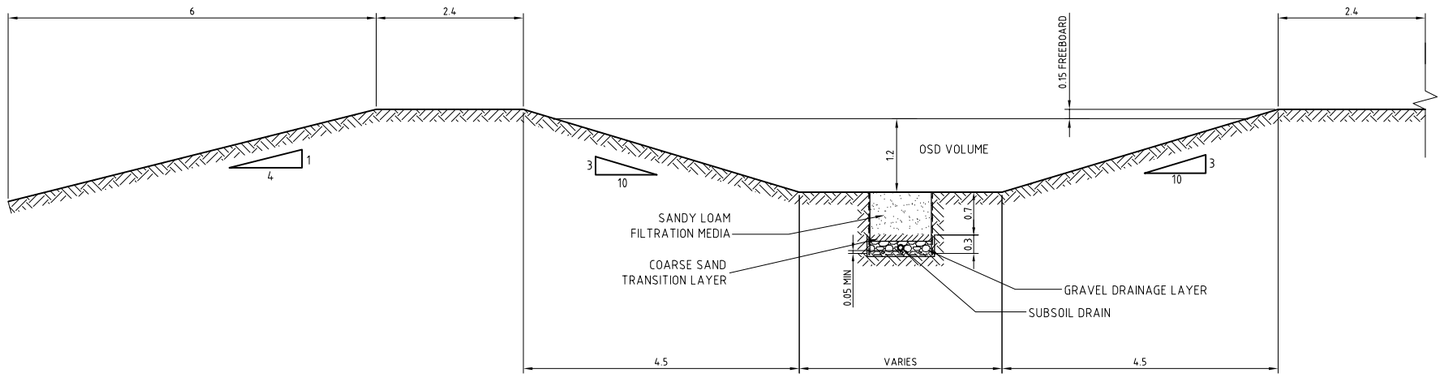
Project: WAHROONGA ESTATE PRECINCT PLAN

Title: STORMWATER REUSE PLAN

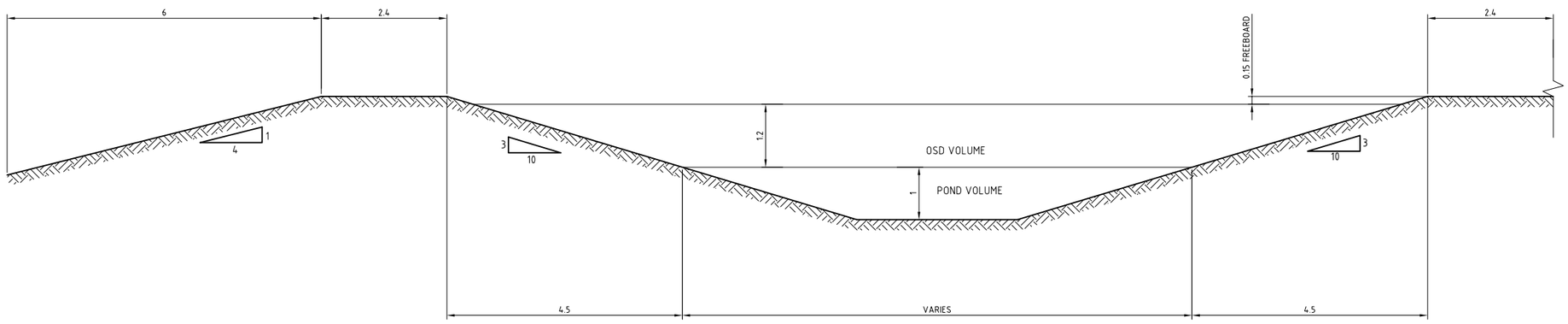
Scale (A1): 1:2000 | Datum: AHD
Drawn: GP | Designed: GP

Hyder Consulting
HYDER CONSULTING PTY LTD
Level 5
141 Walker St
North Sydney, NSW, 2060
ABN 76 104 485 289
Tel: +61 (0)2 8907 9000
Fax: +61 (0)2 8907 9001

Project Code	Drawing No.	Issue
AA001545	SKC008	P1



TYPICAL OSD BASIN/RAIN GARDEN COMBINED SECTION
1:50



TYPICAL OSD/POND COMBINED SECTION
1:50

NOTE:
FOR DETENTION BASIN SEE SKC007 AND SKC008

Issue	Description	Drwn	Ckd.	Appd.	Date
P1	ISSUE FOR INFORMATION	RD	MG		27.11.08

0 1 2 3 4 5m
1 : 50 (A1)

0 2 4 6 8 10m
1 : 100 (A3)

100mm On Original A1

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Client: JOHNSON PROPERTY GROUP

Project: WAHROONGA ESTATE PRECINCT PLAN

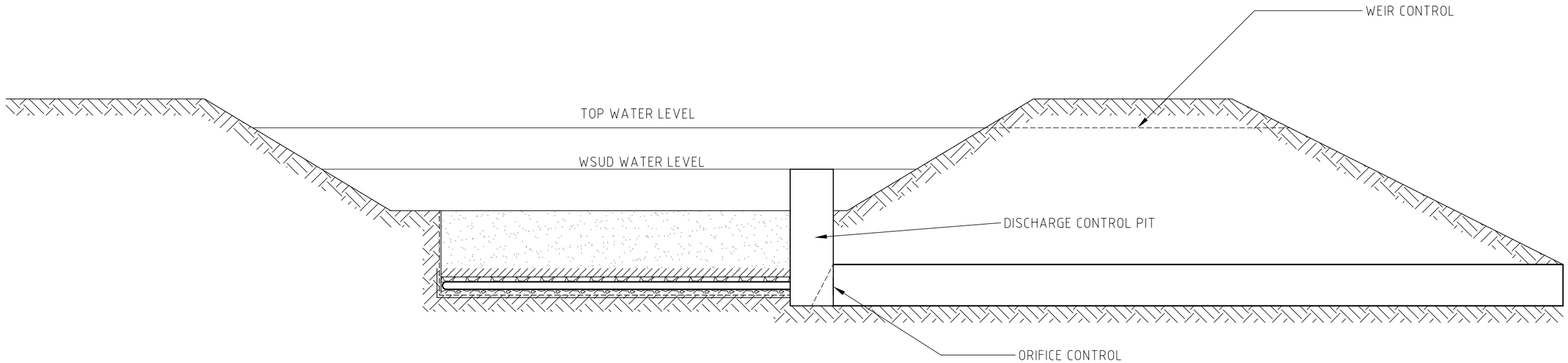
Title: DETENTION BASINS TYPICAL SECTION

Scale (A1): 1:50 | Datum: AHD
Drawn: RD | Designed: GP

Hyder Consulting
HYDER CONSULTING PTY LTD
Level 5
141 Walker St
North Sydney, NSW, 2060
ABN 76 104 485 289
Tel: +61 (0)2 8907 9000
Fax: +61 (0)2 8907 9001

Project Code: AA001545 | Drawing No.: SKC009 | Issue: P1

Date Plotted: 15 May 2008 - 4:49pm File Name: F:\AAMK0001-02\06-94 San Hospital Masterplan\E-Dwgs\SKC001-AAMK-06-94-NSX-00-RIPARIAN-KU-RING-GA1.dwg



TYPICAL OSD BASIN/RAIN GARDEN COMBINED LONG SECTION

NOTE:
FOR DETENTION BASIN SEE SKC007 AND SKC008

Issue	Description	Drwn	Ckd.	Appd.	Date
P1	ISSUE FOR INFORMATION	RD	MG		27.11.08

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Client: JOHNSON PROPERTY GROUP

Project: WAHROONGA ESTATE PRECINCT PLAN

Title: DETENTION BASINS TYPICAL LONG SECTION

Scale (A1): NTS | Datum: AHD | Drawn: RD | Designed: GP

100mm On Original A1

HYDER CONSULTING PTY LTD
Level 5
141 Walker St
North Sydney, NSW, 2060
ABN 76 104 485 289
Tel: +61 (0)2 8907 9000
Fax: +61 (0)2 8907 9001

Project Code: AA001545 | Drawing No.: SKC010 | Issue: P1

Date Plotted: 15 May 2008 - 4:49pm File Name: F:\AAMK0001-02\06-94 San Hospital Masterplan\E-Dwgs\SKC001-AAMK-06-94-NSX-00-RIPARIAN-KU-RING-GAI.dwg