

Computations

Millar & Merrigan Pty Ltd ACN 005 541 668

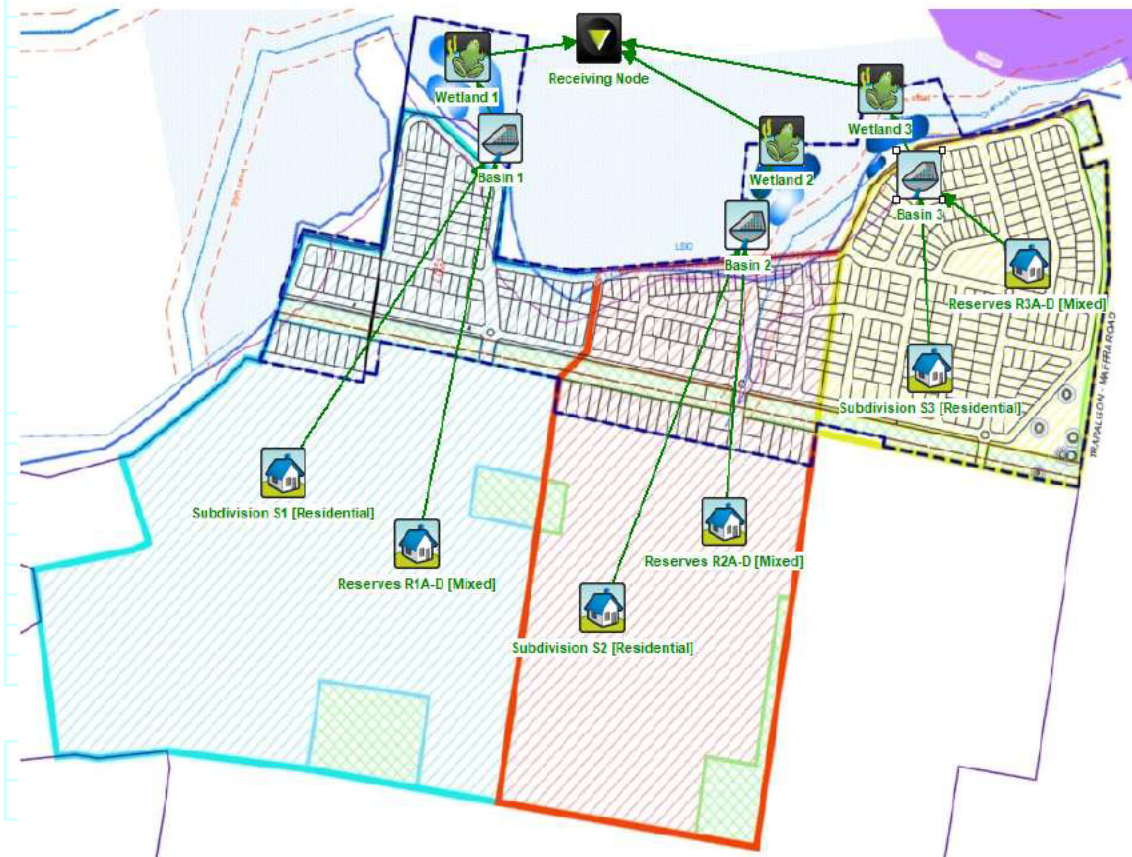
Client: _____
 Project: Traralgon Rezoning
 Subject: **WSUD - INPUTS & SCHEMATIC MODEL**
 Designer: _____ Checker: _____

Date: Mar-2025
 Page No: 1 of 6
 Reference No: 25950

Summary of Input parameters:

Effective Impervious % for Subdivision	83%	(as per IDM, where runoff co-efficient is 0.75 for Lots>450-600m ²)
Effective Impervious % for Open Space	27%	(as per IDM, where runoff co-efficient is 0.35 for open space)
Catchment Details	Refer to Catchment Plan (WSUD)	
Rainfall zone:	Traralgon, 19 years data adopted	

Schematic Model:

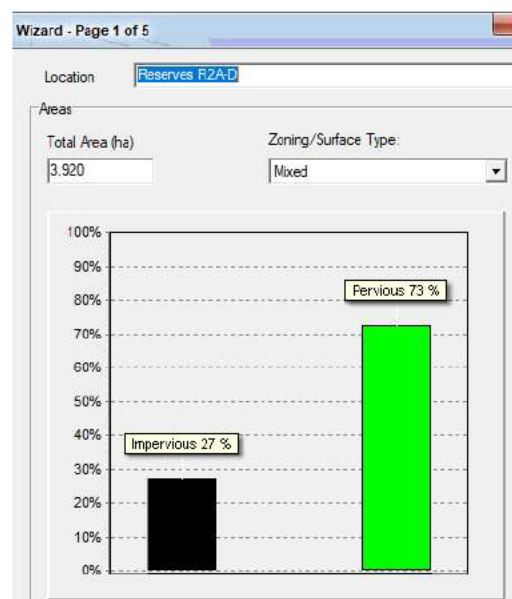
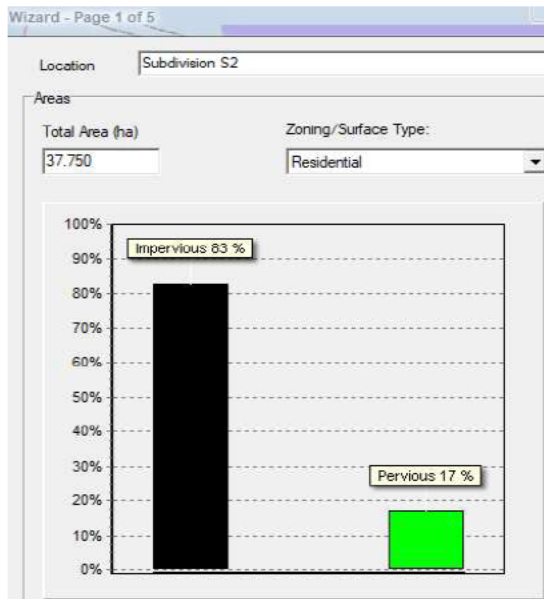
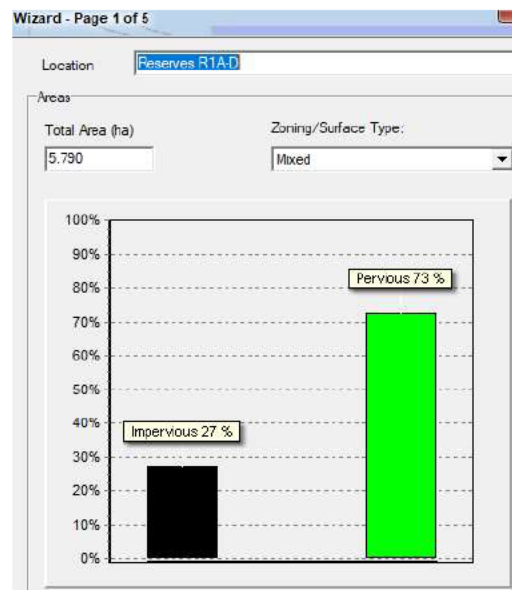
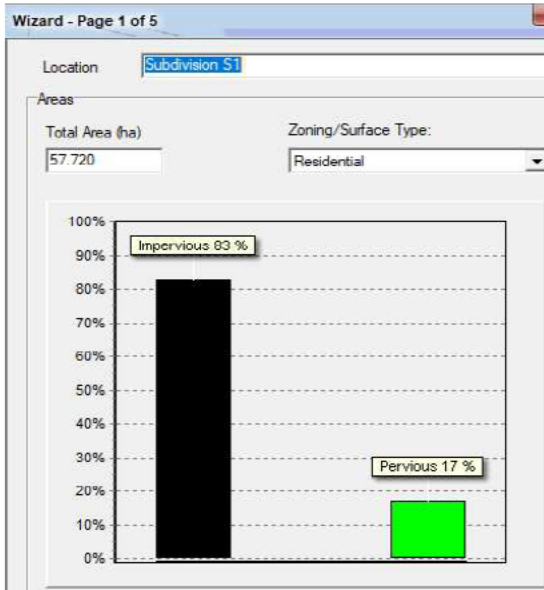


Computations

Millar & Merrigan Pty Ltd ACN 005 541 668

Client:		Date:	Mar-2025
Project:	Traralgon Rezoning	Page No:	2 of 6
Subject:	WSUD - SOURCE NODES	Reference No:	25950
Author:			

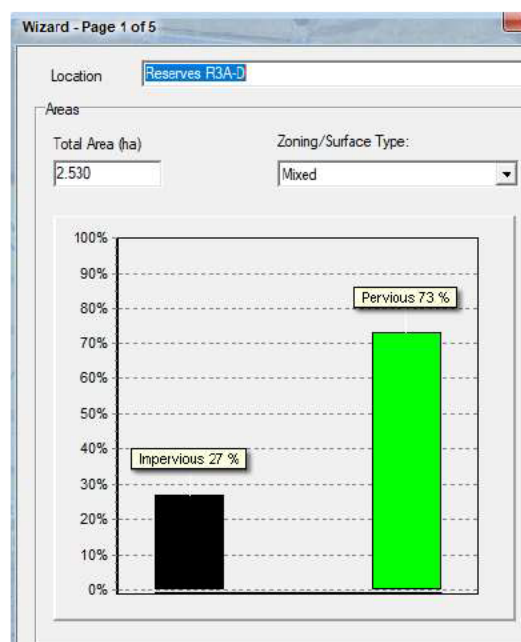
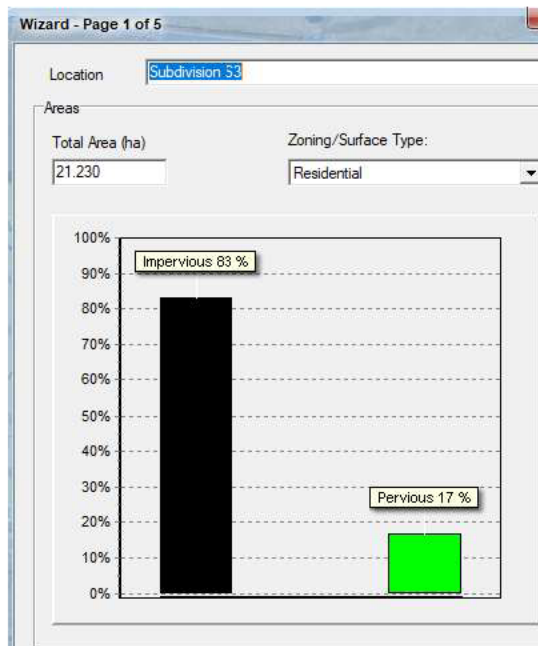
Source Nodes



Computations

Millar & Merrigan Pty Ltd ACN 005 541 668

Client:	Date: Mar-2025
Project: Traralgon Rezoning	Page No: 3 of 6
Subject: WSUD - SOURCE & TREATMENT NODES	Reference No: 25950
Author:	



Treatment Nodes

Properties of Basin 1

Location: Basin 1

Inlet Properties

Low Flow By-pass (cubic metres per sec): 0.00000

High Flow By-pass (cubic metres per sec): 100.0000

Storage Properties

Surface Area (square metres): 4950.0

Extended Detention Depth (metres): 0.50

Permanent Pool Volume (cubic metres): 5940.0

Initial Volume (cubic metres): 5940.00

Exfiltration Rate (mm/hr): 0.00

Evaporative Loss as % of PET: 75.00

Estimate Parameters

Outlet Properties

Equivalent Pipe Diameter (mm): 76

Overflow Weir Width (metres): 2.0

Notional Detention Time (hrs): 72.2

☐ Use Custom Outflow and Storage Relationship

Define Custom Outflow and Storage: Not Defined

Re-use... Fluxes... Notes... More

Properties of Wetland 1

Location: Wetland 1

Inlet Properties

Low Flow By-pass (cubic metres per sec): 0.00000

High Flow By-pass (cubic metres per sec): 100.0000

Inlet Pond Volume (cubic metres): 4950.0

Estimate Inlet Volume

Storage Properties

Surface Area (square metres): 10000.0

Extended Detention Depth (metres): 0.50

Permanent Pool Volume (cubic metres): 5000.0

Initial Volume (cubic metres): 4950.00

Vegetation Cover (% of surface area): 50.0

Exfiltration Rate (mm/hr): 0.00

Evaporative Loss as % of PET: 125.00

Outlet Properties

Equivalent Pipe Diameter (mm): 108

Overflow Weir Width (metres): 3.0

Notional Detention Time (hrs): 72.3

☐ Use Custom Outflow and Storage Relationship

Define Custom Outflow and Storage: Not Defined

Re-use... Fluxes... Notes... More

Computations

Millar & Merrigan Pty Ltd ACN 005 541 668

Client:		Date:	Mar-2025
Project:	Traralgon Rezoning	Page No:	4 of 6
Subject:	WSUD - TREATMENT NODES	Reference No:	25950
Author:			

Treatment Nodes

Properties of Basin 2

Location: Basin 2

Inlet Properties

Low Flow By-pass (cubic metres per sec): 0.00000

High Flow By-pass (cubic metres per sec): 100.0000

Storage Properties

Surface Area (square metres): 2600.0

Extended Detention Depth (metres): 0.50

Permanent Pool Volume (cubic metres): 3120.0

Initial Volume (cubic metres): 3120.00

Exfiltration Rate (mm/hr): 0.00

Evaporative Loss as % of PET: 75.00

Estimate Parameters

Outlet Properties

Equivalent Pipe Diameter (mm): 55

Overflow Weir Width (metres): 2.0

Notional Detention Time (hrs): 72.5

☐ Use Custom Outflow and Storage Relationship

Define Custom Outflow and Storage: Not Defined

Re-use... Fluxes... Notes... More

Properties of Wetland 2

Location: Wetland 2

Inlet Properties

Low Flow By-pass (cubic metres per sec): 0.00000

High Flow By-pass (cubic metres per sec): 100.0000

Inlet Pond Volume (cubic metres): 2600.0

Estimate Inlet Volume

Storage Properties

Surface Area (square metres): 4550.0

Extended Detention Depth (metres): 0.50

Permanent Pool Volume (cubic metres): 2200.0

Initial Volume (cubic metres): 2600.00

Vegetation Cover (% of surface area): 50.0

Exfiltration Rate (mm/hr): 0.00

Evaporative Loss as % of PET: 125.00

Outlet Properties

Equivalent Pipe Diameter (mm): 73

Overflow Weir Width (metres): 3.0

Notional Detention Time (hrs): 72.0

☐ Use Custom Outflow and Storage Relationship

Define Custom Outflow and Storage: Not Defined

Re-use... Fluxes... Notes... More

Properties of Basin 3

Location: Basin 3

Inlet Properties

Low Flow By-pass (cubic metres per sec): 0.00000

High Flow By-pass (cubic metres per sec): 100.0000

Storage Properties

Surface Area (square metres): 600.0

Extended Detention Depth (metres): 0.50

Permanent Pool Volume (cubic metres): 720.0

Initial Volume (cubic metres): 720.00

Exfiltration Rate (mm/hr): 0.00

Evaporative Loss as % of PET: 75.00

Estimate Parameters

Outlet Properties

Equivalent Pipe Diameter (mm): 26

Overflow Weir Width (metres): 2.0

Notional Detention Time (hrs): 74.8

☐ Use Custom Outflow and Storage Relationship

Properties of Wetland 3

Location: Wetland 3

Inlet Properties

Low Flow By-pass (cubic metres per sec): 0.00000

High Flow By-pass (cubic metres per sec): 100.0000

Inlet Pond Volume (cubic metres): 720.0

Estimate Inlet Volume

Storage Properties

Surface Area (square metres): 4400.0

Extended Detention Depth (metres): 0.50

Permanent Pool Volume (cubic metres): 2200.0

Initial Volume (cubic metres): 720.00

Vegetation Cover (% of surface area): 50.0

Exfiltration Rate (mm/hr): 0.00

Evaporative Loss as % of PET: 125.00

Outlet Properties

Equivalent Pipe Diameter (mm): 72

Overflow Weir Width (metres): 3.0

Notional Detention Time (hrs): 71.6

☐ Use Custom Outflow and Storage Relationship

Define Custom Outflow and Storage: Not Defined

Re-use... Fluxes... Notes... More

Computations

Millar & Merrigan Pty Ltd ACN 005 541 668

Client:		Date:	Mar-2025
Project:	Traralgon Rezoning	Page No:	5 of 6
Subject:	WSUD - INDIVIDUAL TREATMENT EFFECTIVENESS		Reference No: 25950
Author:			

Individual Treatment Effectiveness

	Sources	Residual Load	% Reduction
Flow (ML/yr)	285	265	6.8
Total Suspended Solids (kg/yr)	51600	3550	93.1
Total Phosphorus (kg/yr)	84.3	22.2	73.6
Total Nitrogen (kg/yr)	625	328	47.6
Gross Pollutants (kg/yr)	12000	0	100

	Sources	Residual Load	% Reduction
Flow (ML/yr)	186	178	4.8
Total Suspended Solids (kg/yr)	34200	3320	90.3
Total Phosphorus (kg/yr)	55.5	17.2	69
Total Nitrogen (kg/yr)	411	237	42.4
Gross Pollutants (kg/yr)	7830	0	100

	Sources	Residual Load	% Reduction
Flow (ML/yr)	105	98.3	6.7
Total Suspended Solids (kg/yr)	19300	2070	89.3
Total Phosphorus (kg/yr)	31.3	9.16	70.8
Total Nitrogen (kg/yr)	233	130	44.1
Gross Pollutants (kg/yr)	4430	0	100

Computations

Millar & Merrigan Pty Ltd ACN 005 541 668

Client:		Date:	Mar-2025
Project:	Traralgon Rezoning	Page No:	6 of 6
Subject:	WSUD - MUSIC OUTPUT & SUMMARY	Reference No:	25950
Author:			

Overall %Removal from MUSIC

Treatment Train Effectiveness - Receiving Node			
	Sources	Residual Load	% Reduction
Flow (ML/yr)	576	541	6.1
Total Suspended Solids (kg/yr)	105000	8940	91.5
Total Phosphorus (kg/yr)	171	48.6	71.6
Total Nitrogen (kg/yr)	1270	695	45.3
Gross Pollutants (kg/yr)	24200	0	100

Summary:

* 100% of Best Practice Performance Objectives for Stormwater Quality, as contained in BPEMG

Stormwater Quality	BPEMG* requirement	(% reduction)	Achieved	Accounted
Total Suspended Solids (TSS)	80	91.5	114%	100%
Total Phosphorus	45	71.6	159%	100%
Total Nitrogen	45	45.3	101%	100%
Gross Pollutants (GP)	70	100.0	143%	100%