

17 July 2025

Gavin Edwards
RPS
Level 8, 31 Duncan Street,
Fortitude Valley QLD 4006
(via email)

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1667
Date: 23 October 2025



Dear Gavin

Re: YARRABILBA PRECINCT 4H STORMWATER MANAGEMENT PLAN VERIFICATION

This letter is provided to support the stormwater management strategy update associated with Yarrabilba Precinct 4H. The precinct layout and land use remain generally in accordance with the approved *Yarrabilba Precinct 5 Stormwater Management Plan – Version 2* (DesignFlow, 2017) (referred to herein as SMP-V2, noting 'Precinct 5' has now been renamed to 'Precinct 4' since the original SMP). Subsequent sub-precinct certifications have been provided against this SMP-V2 with the most recent of these relating to the P4 northern tributary being the *Yarrabilba Precinct 4 Stage 17 Stormwater Discharge and Precinct 4 (North) Stormwater Quality Strategy Verification* (DesignFlow, 13/10/2021).

The updated data and modelling presented in this letter is a further update to the northern P4 tributary stormwater management strategy with the latest layout and land use data for Precinct 4H as well as the now developed areas of this precinct.

1.1 OVERVIEW

Precinct 4H covers a total area of 11.55 hectares in total with around half of this area comprising linear open space in the form of waterway and flood corridors. Proposed land use breakdown is provided in Table 1 with the layout in Figure 1.

Table 1: Precinct 4H land use mix

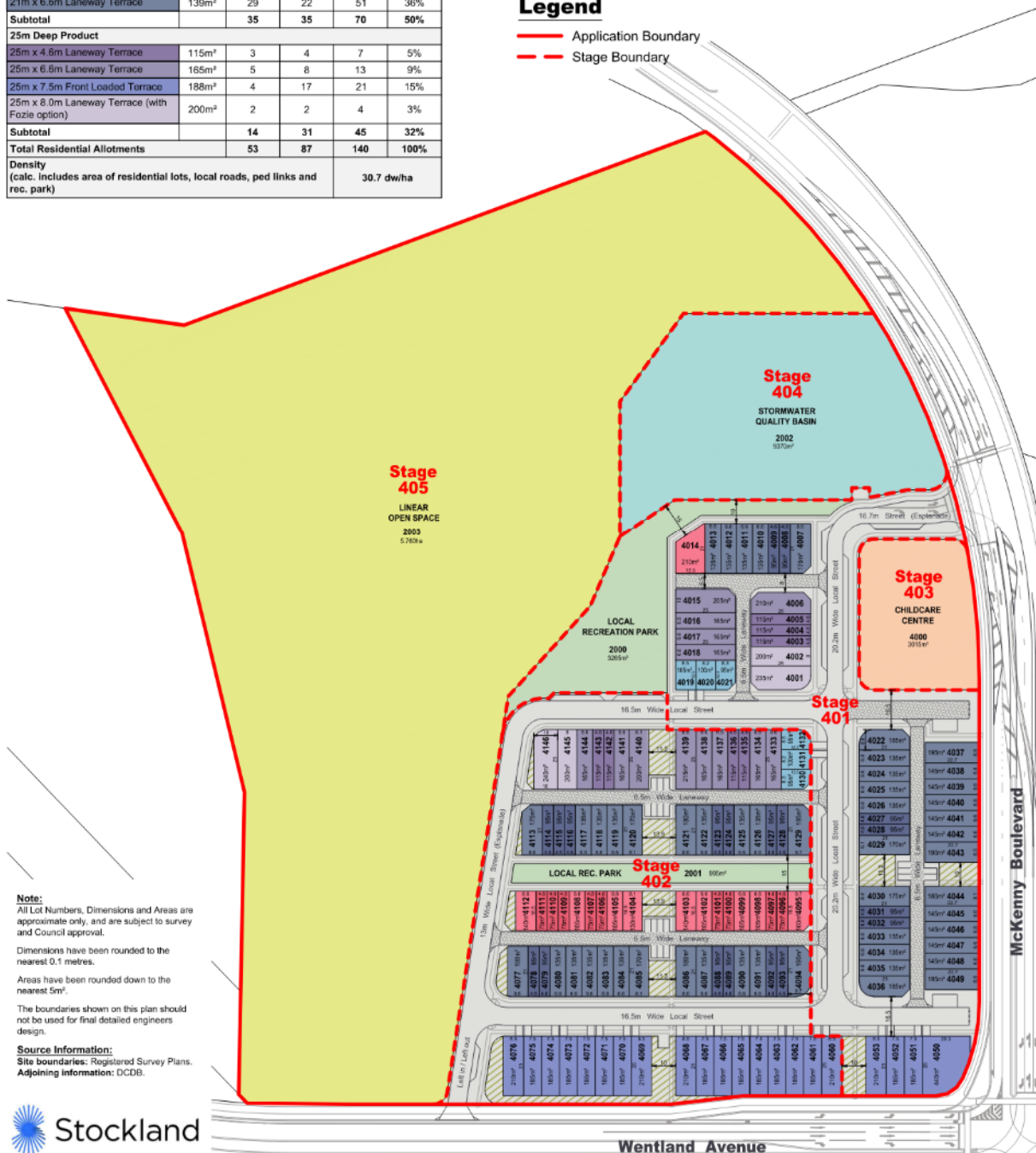
Land Use	Stage 401	Stage 402	Stage 403	Stage 404	Stage 405	Overall	
Childcare Centre	—	—	0.302 ha	—	—	0.302 ha	2.6%
Residential Allotments	0.836 ha	1.232 ha	—	—	—	2.068 ha	17.9%
Local Roads	1.023 ha	0.817 ha	—	—	—	1.840 ha	15.9%
Pedestrian Links / Widened Road Reserve for Planting	0.061 ha	0.162 ha	—	—	—	0.223 ha	1.9%
Local Recreation Park	0.327 ha	0.099 ha	—	—	—	0.426 ha	3.7%
Drainage Open Space	—	—	—	0.927 ha	—	0.927 ha	8.0%
Linear Open Space	—	—	—	—	5.764 ha	5.764 ha	49.9%
Total	2.247 ha	2.310 ha	0.302 ha	0.927 ha	5.764 ha	11.550 ha	100.0%

Yield Breakdown					
Allotment Typology	Typical Area	Stage 401	Stage 402	Overall	
12m Deep Product					
12m x 8.2m Front Loaded Urban Loft	98m²	3	3	6	4%
Subtotal		3	3	6	4%
16.5m Deep Product					
16.5m x 4.8m Laneway Terrace	76m²	—	9	9	5%
16.5m x 6.8m Laneway Terrace	109m²	1	9	10	7%
Subtotal		1	18	19	14%
21m Deep Product					
21m x 4.8m Laneway Terrace	97m²	6	13	19	14%
21m x 6.8m Laneway Terrace	139m²	29	22	51	36%
Subtotal		35	35	70	50%
25m Deep Product					
25m x 4.8m Laneway Terrace	115m²	3	4	7	5%
25m x 6.8m Laneway Terrace	165m²	5	8	13	9%
25m x 7.5m Front Loaded Terrace	188m²	4	17	21	15%
25m x 8.0m Laneway Terrace (with Fozie option)	200m²	2	2	4	3%
Subtotal		14	31	45	32%
Total Residential Allotments		53	87	140	100%
Density (calc. includes area of residential lots, local roads, ped links and rec. park)				30.7 dwha	

Land Budget						
Land Use	Stage 401	Stage 402	Stage 403	Stage 404	Stage 405	Overall
Childcare Centre	—	—	0.302 ha	—	—	0.302 ha 2.6%
Residential Allotments	0.836 ha	1.232 ha	—	—	—	2.068 ha 17.9%
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Local Recreation Park	0.327 ha	0.099 ha	—	—	—	0.426 ha 3.7%
Drainage Open Space	—	—	—	0.927 ha	—	0.927 ha 8.0%
Linear Open Space	—	—	—	—	5.764 ha	5.764 ha 49.9%
Total	2.247 ha	2.310 ha	0.302 ha	0.927 ha	5.764 ha	11.550 ha 100.0%

Legend

- Application Boundary
- Stage Boundary



PLAN REF: 150827 - 36
Rev No: —
DATE: 17 July 2025
CLIENT: Stockland
DRAWN BY: BM / MM
CHECKED BY: BM / PE



0 20 40 60 80 100 1:1,500 (3 A3)

YARRABILBA PRECINCT 4 - APPLICATION 8 PLAN OF SUBDIVISION

URBAN DESIGN
Level 8
31 Duncan Street
PO Box 1559
Fortitude Valley QLD 4006
T +61 7 3533 9500
W rpsgroup.com



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Figure 1: Precinct 4H layout

2 STORMWATER QUALITY

Precinct 4H forms the last residential development stage within the northern portion of Precinct 4 discharging to the northern tributary. The previously approved SMP-V2 adopted a precinct wide stormwater quality management strategy to enable the majority of development areas to drain to treatment (primarily bioretention basins) while offsetting the under or untreated areas of the catchment where provision of treatment basins was constrained or inefficient.

Key updates that have occurred within the broader northern catchment zone since the approved SMP-V2 and subsequent verification letter captured in the current strategy are:

- Sub-catchments refined based on constructed areas of development and drainage.
- Stormwater treatment for the P4 district recreation park removed as this previous open space area is not subject to stormwater treatment.
- The South Rock State School site is removed from the water quality model assessment as this site treats stormwater onsite (to meet objectives independently of surrounding development)
- The district sports park is removed from water quality modelling as this site is still under development and will be designed to treat stormwater onsite (to meet objectives independently of surrounding development).
- Precinct 4H catchment and land use details updated.

The current Precinct 4 northern zone catchment layout including Predict 4H is provided in Attachment 1 with the associated MUSIC modelling verification details in Attachment 2 and the findings summarised in Table 2 below. Overall, the minor amendments to the overall Precinct 4 (northern zone) treatment strategy to reflect the functional design of Precinct 4H meets the stormwater quality design objectives presented in the previously approved SMP-V2.

Table 2: MUSIC modelling results (Predict 4H including balance of P4 northern zone)

Pollutant	Load Generated (kg/yr)	Load Discharge (kg/yr)	Reduction Achieved (%)	Water Quality Objectives	Complies
Total Suspended Solids	51600	10100	80.5	80%	✓
Total Phosphorus	99.6	28.1	71.8	60%	✓
Total Nitrogen	520	272	47.7	45%	✓
Gross Pollutants	6450	3.16	100	90%	✓

3 WATERWAY STABILITY

The Precinct 4H development layout and revised stormwater quality management strategy above remains consistent with the previously approved *Yarrabilba Precinct 5 Stormwater Management Plan – Version 2* (DesignFlow, 2017) (SMP-V2) by maintaining buffers to waterways and wetlands. The waterway corridor adjacent to the proposed stormwater quality basins was identified as disturbed (livestock and vehicles tracks) and proposed for progressive revegetation as part of the rehabilitation plans. Finally, all stormwater outlets to the waterway corridor are to be rock

stabilised. No changes to the existing strategy arise from the current proposed layout of Precinct 4H.

4 FLOODING

Precinct 4H is generally in accordance with the *Yarrabilba Masterplan Flood Risk Management Strategy – Version 1.2* (DesignFlow, 2024). No flood detention infrastructure is required as part of precinct 4H as it falls within the regional strategy that is managed by the Expedition Road detention basin (approved previously as part of Precinct 3B). All lot levels in Precinct 4H are well above 1% AEP climate change flood level of RL29.36 interfacing the western boundary of the precinct (with development levels generally >2m above this flood level).

I trust this provides sufficient information to support the current stormwater management approach for Precinct 4H. If have any questions, please contact DesignFlow.

Yours Sincerely



Shaun Leinster
Director
RPEQ 15637
DesignFlow

Attachments:

1. Precinct 4H (and P4 northern zone) catchment and stormwater treatment layout
2. Updated Precinct 4H (and P4 northern zone) MUSIC model verification assessment

ATTACHMENT 1: PRECINCT 4H (P4 NORTHERN ZONE) CATCHMENT AND STORMWATER TREATMENT LAYOUT

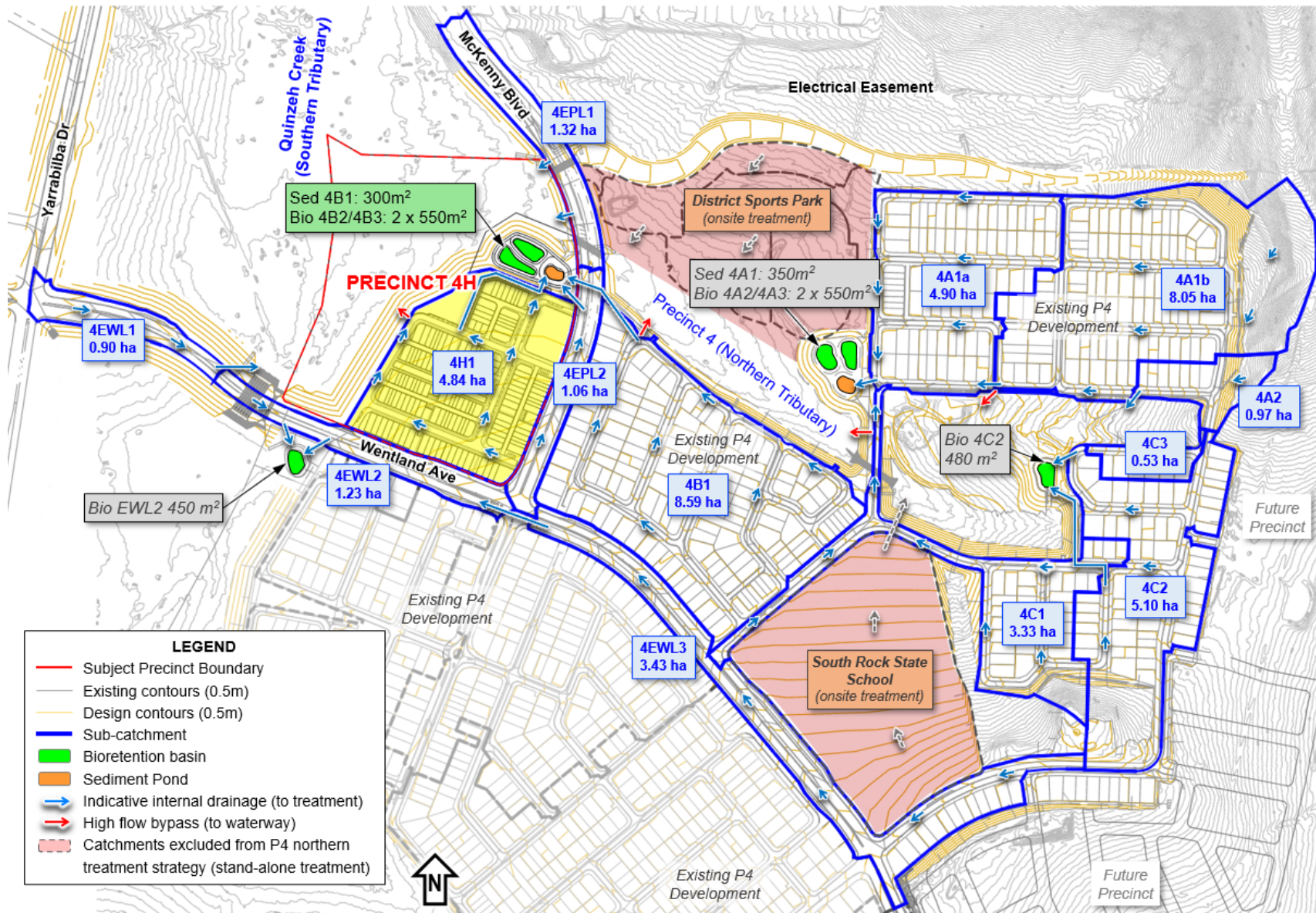


Figure 1: Precinct 4H (including P4 north) stormwater management strategy

ATTACHMENT 2: PRECINCT 4H (AND P4 NORTHERN ZONE) MUSIC MODEL VERIFICATION ASSESSMENT

The information provided below represents an update to the stormwater quality modelling documented in the *Yarrabilba Precinct 4 Stage 17 Stormwater Discharge and Precinct 4 (North) Stormwater Quality Strategy Verification* (DesignFlow, 13/10/2021) to reflect the development layout of Precinct 4H (formerly labelled as catchment 6H1). The water quality strategy for Precinct 4H is part of a broader sub-precinct strategy enabling overtreatment of some catchments to offset the under treatment of others. Table 2 summarises the existing and proposed treatment measures for P4 northern zone with the green highlighted basins proposed as part of Precinct 4H.

Table 3: Precinct 4 (northern zone) stormwater treatment elements

Treatment Type and ID	Size	Catchments	Comment
Sediment Pond 4A1 Bioretention Basin 4A2-4A3	350 m ² 2 x 550m ²	4A1a, 4A1b, 4C1	Existing basin (partially constructed)
Bioretention Basin 4C2	480 m ²	4C2, 4C3	Existing basin
Sediment Pond 4B1 Bioretention Basin 4B2-4B3	300 m ² 2 x 550m ²	4B1, EPL2, 4H1	Basin proposed as part of Precinct 4H
Bioretention Basin 4EWL2	450 m ²	EWL2, EWL3	Existing basin (partially constructed)
Swales 4A2, EPL1 & EWL1	10m @ 1% grade ²	4A2, EPL1, EWL1)	Swale at outlets taken as 1m base, 1:4batters ²

Note:

1. Previous catchment 6H1 was renamed to catchment 4H1 to reflect current precinct numbering.
2. Swales at outlets of under-treatment catchments are included at nominal length of 10m to represent revegetated flow paths upstream of receiving waterways. Actual flow paths are longer. These allow for minor capture of coarse sediment at outlets.

The data presented in Table 4 below represents the latest catchment data derived from existing development areas and current proposed Precinct 4H. The MUSIC model layout is provided in Figure 2. All other MUSIC modelling assumptions remain generally in accordance with the previous assessments and the MUSIC Modelling Guidelines.

Table 4: MUSIC model catchment data

Catchment ID	Total Area (ha)	Total % Impervious	Surface Type	Sub-Area (ha)	Sub-Area % Impervious
4A1a	4.9	60%	Road	1.23	60%
			Roof	1.84	100%
			Ground	1.84	20%
4A1b	8.05	44%	Road	1.46	60%
			Roof	2.19	100%
			Ground	2.19	20%
			Park	2.21	0%
4A2	0.97	37%	Road	0.15	60%
			Roof	0.23	100%
			Ground	0.23	20%
			Park	0.37	0%
4B1	8.59	60%	Road	2.15	60%
			Roof	3.22	100%
			Ground	3.22	20%
4C1	3.33	54%	Road	0.74	60%
			Roof	1.11	100%
			Ground	1.11	20%
			Park	0.37	5%
4C2	5.1	50%	Road	1.05	60%
			Roof	1.57	100%
			Ground	1.57	20%
			Park	0.92	5%
4C3	0.53	60%	Road	0.13	60%
			Roof	0.20	100%
			Ground	0.20	20%
4H1	4.84	68%	Road ¹	2.06	70%
			Roof ²	1.77	100%
			Ground	0.60	30%
			Park	0.43	20%
4EPL1	1.32	70%	Road	1.32	70%
4EPL2	1.06	70%	Road	1.06	70%
4EWL1	0.9	70%	Road	0.90	70%
4EWL2	1.23	70%	Road	1.23	70%
4EWL3	3.43	70%	Road	3.43	70%

Notes:

1. Roads category includes widened verges and pedestrian links.
2. Precinct 4H (catchment 4H1) roof area taken as 75% of lot area based on maximum row/terrace lot coverage allowance in EDQ PDA Guideline no.1 Residential 30.

The MUSIC model layout is shown below in Figure 2 (generally consistent with previous assessment) with the results presented in Table 5.

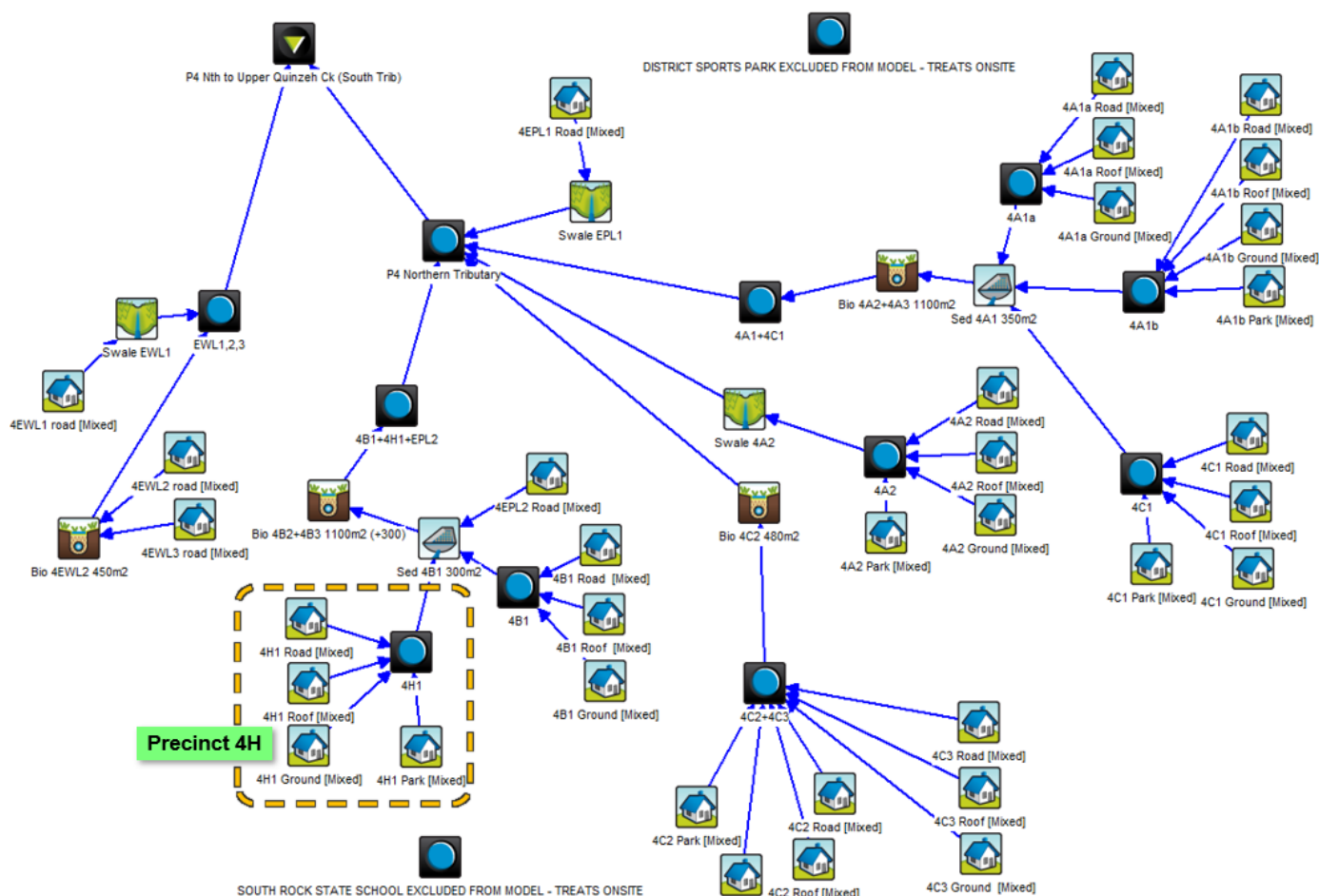


Figure 2: Precinct 4H (including P4 northern zone) MUSIC model layout

Table 5: MUSIC results

Catchments	Treatment ID	Pollutant	Inflows (kg/yr)	Outflows (kg/yr)	Reduction (%)
4A1 (a/b), 4C1	Sed 4A1, Bio 4A2-A3	TSS	12800	1910	85.1
		TP	27.5	6.81	75.2
		TN	174	84.8	51.3
		GP	2070	0	100
4A2	Swale 4A2	TSS	632	236	62.6
		TP	1.34	0.815	39.1
		TN	8.55	7.96	6.9
		GP	91.9	0	100
4C2, 4C3	Bio 4C2	TSS	4400	764	82.7
		TP	9.52	2.48	74
		TN	60.7	29.2	52
		GP	728	3.16	99.6

Table 5 continued over page

Table 5 (continued)

Catchments	Treatment ID	Pollutant	Inflows (kg/yr)	Outflows (kg/yr)	Reduction (%)	
4B1, 4H1, 4EPL2	Sed 4B1, Bio 4B2-B3	TSS	16600	2430	85.4	
		TP	33.3	8.04	75.9	
		TN	184	90.8	50.6	
		GP	2330	0	100	
4EWL2, 4EWL3	Bio EWL2	TSS	11600	1640	85.8	
		TP	19	3.82	79.9	
		TN	62.8	30.1	52.2	
		GP	831	0	100	
4EWL1	Swale EWL1	TSS	2250	1170	48.1	
		TP	3.65	2.36	35.3	
		TN	12.1	11.7	3.4	
		GP	160	0	100	
4EPL1	Swale EPL1	TSS	3290	1910	41.9	
		TP	5.36	3.76	29.8	
		TN	17.7	17.2	2.8	
		GP	235	0	100	
Total Precinct 4 (north) (✓ denotes compliance with water quality objectives)		TSS	51600	10100	80.5	✓
		TP	99.6	28.1	71.8	✓
		TN	520	272	47.7	✓
		GP	6450	3.16	100	✓

Conclusion

The updated MUSIC modelling for Precinct 4H (in conjunction with the broader P4 northern zone) confirms that the water quality objectives can be achieved with the minor updates to land use assumptions and remains generally consistent with the approved *Yarrabilba Precinct 5 Stormwater Management Plan – Version 2* (DesignFlow, 2017).