



# Hopkins

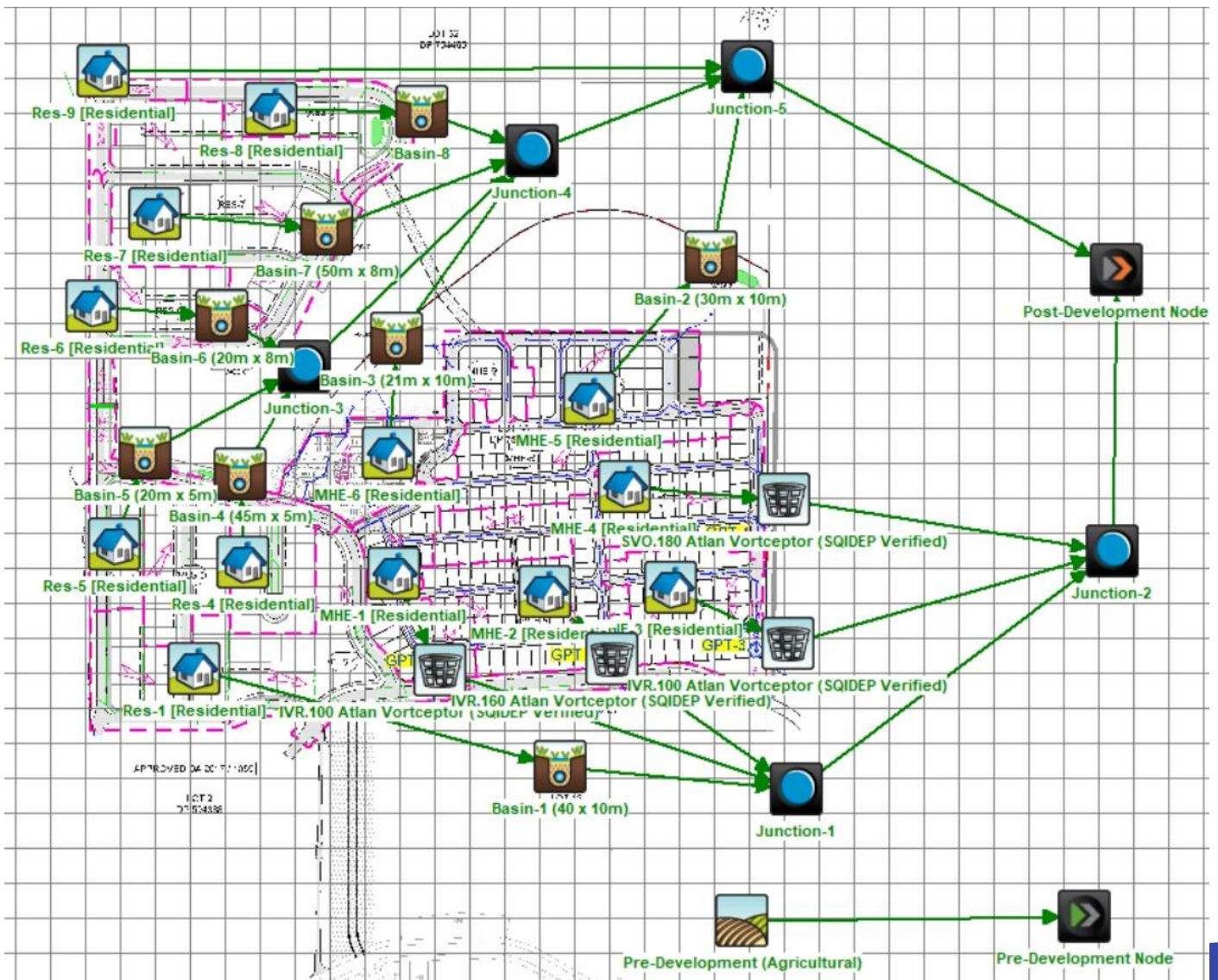
## MUSIC Report

### Woodlands North Estate

### Ocean Drive, Kew

(DA 2025/097), 28th May 2026,

JOJENI INVESTMENTS Pty Ltd



### MUSIC Model Diagram

Telephone: (02) 6583 6722

Email: [admin@hopcon.com.au](mailto:admin@hopcon.com.au)

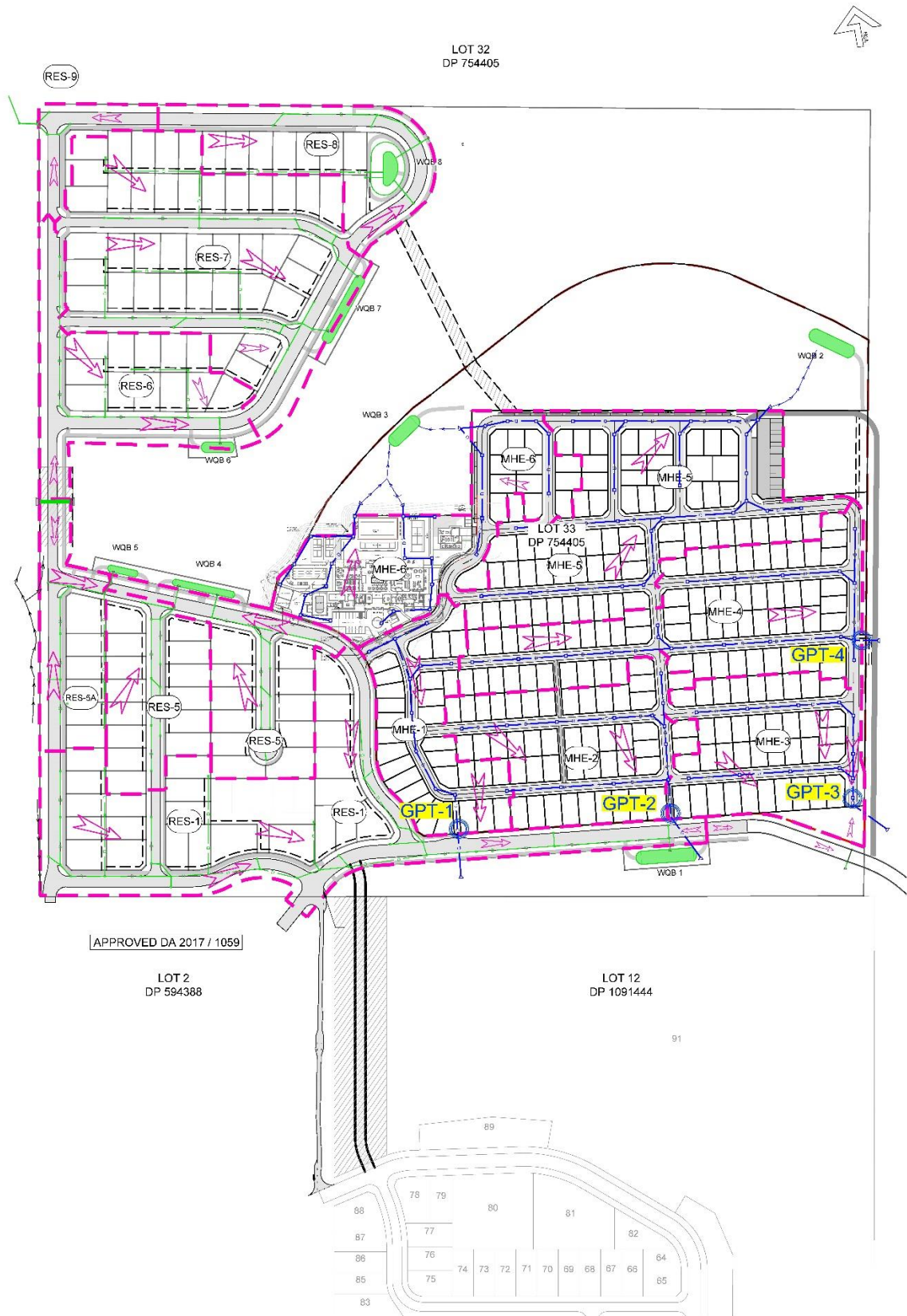
Suite 1, 109 William St

PO BOX 1556, Port Macquarie NSW 2444

Hopkins Consultants Pty Ltd

ABN 27 055 060 878

**SURVEYORS | CIVIL ENGINEERS | PLANNERS**



## Stormwater Drainage Catchment Plan

## PRE-DEVELOPMENT SOURCE NODE DATA - (Agricultural)

Wizard - Page 1 of 5

Location: Pre-Development (Agricultural)

Areas

Total Area (ha): 24.136

Pervious 95 %

Impervious 5 %

Properties of Pre-Development (Agricultural) - Page 2 of 5

### Rainfall-Runoff Parameters

Impervious Area Properties

Rainfall Threshold (mm/day): 1.00

Pervious Area Properties

Soil Storage Capacity (mm): 142

Initial Storage (% of Capacity): 25

Field Capacity (mm): 94

Infiltration Capacity Coefficient - a: 180.0

Infiltration Capacity Exponent - b: 3.00

Groundwater Properties

Initial Depth (mm): 10

Daily Recharge Rate (%): 25.00

Daily Baseflow Rate (%): 25.00

Daily Deep Seepage Rate (%): 0.00

Properties of Pre-Development (Agricultural) - Page 3 of 5

### Total Suspended Solids

Base Flow Concentration Parameters

Mean (log mg/L): 1.300

Std Dev (log mg/L): 0.130

Restore Defaults

Estimation Method

☐ Mean ☒ Stochastically generated

Serial Correlation (R squared): 0.00

Storm Flow Concentration Parameters

Mean (log mg/L): 2.150

Std Dev (log mg/L): 0.310

Restore Defaults

Estimation Method

☐ Mean ☒ Stochastically generated

Serial Correlation (R squared): 0.00

Properties of Pre-Development (Agricultural) - Page 4 of 5

### Total Phosphorus

Base Flow Concentration Parameters

Mean (log mg/L): -1.050

Std Dev (log mg/L): 0.130

Restore Defaults

Estimation Method

☐ Mean ☒ Stochastically generated

Serial Correlation (R squared): 0.00

Storm Flow Concentration Parameters

Mean (log mg/L): -0.220

Std Dev (log mg/L): 0.300

Restore Defaults

Estimation Method

☐ Mean ☒ Stochastically generated

Serial Correlation (R squared): 0.00

Properties of Pre-Development (Agricultural) - Page 5 of 5

### Total Nitrogen

Base Flow Concentration Parameters

Mean (log mg/L): 0.040

Std Dev (log mg/L): 0.130

Restore Defaults

Estimation Method

☐ Mean ☒ Stochastically generated

Serial Correlation (R squared): 0.00

Storm Flow Concentration Parameters

Mean (log mg/L): 0.480

Std Dev (log mg/L): 0.260

Restore Defaults

Estimation Method

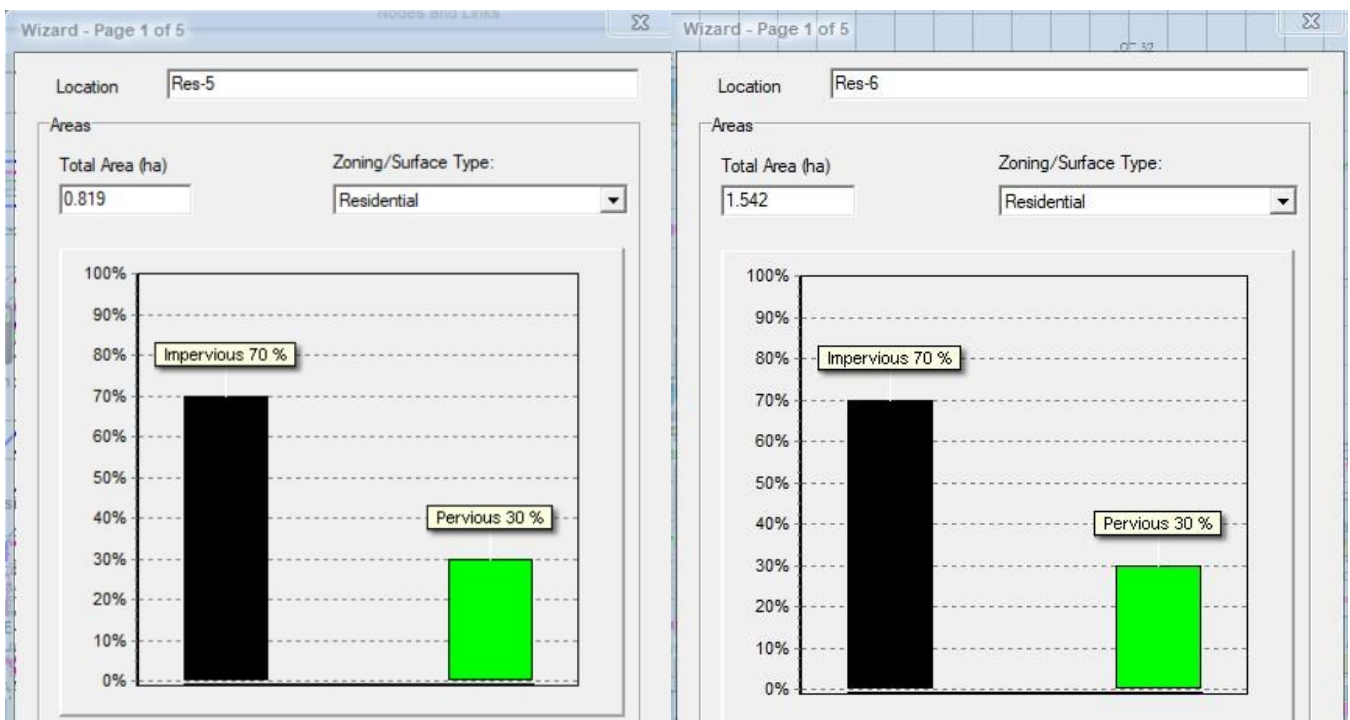
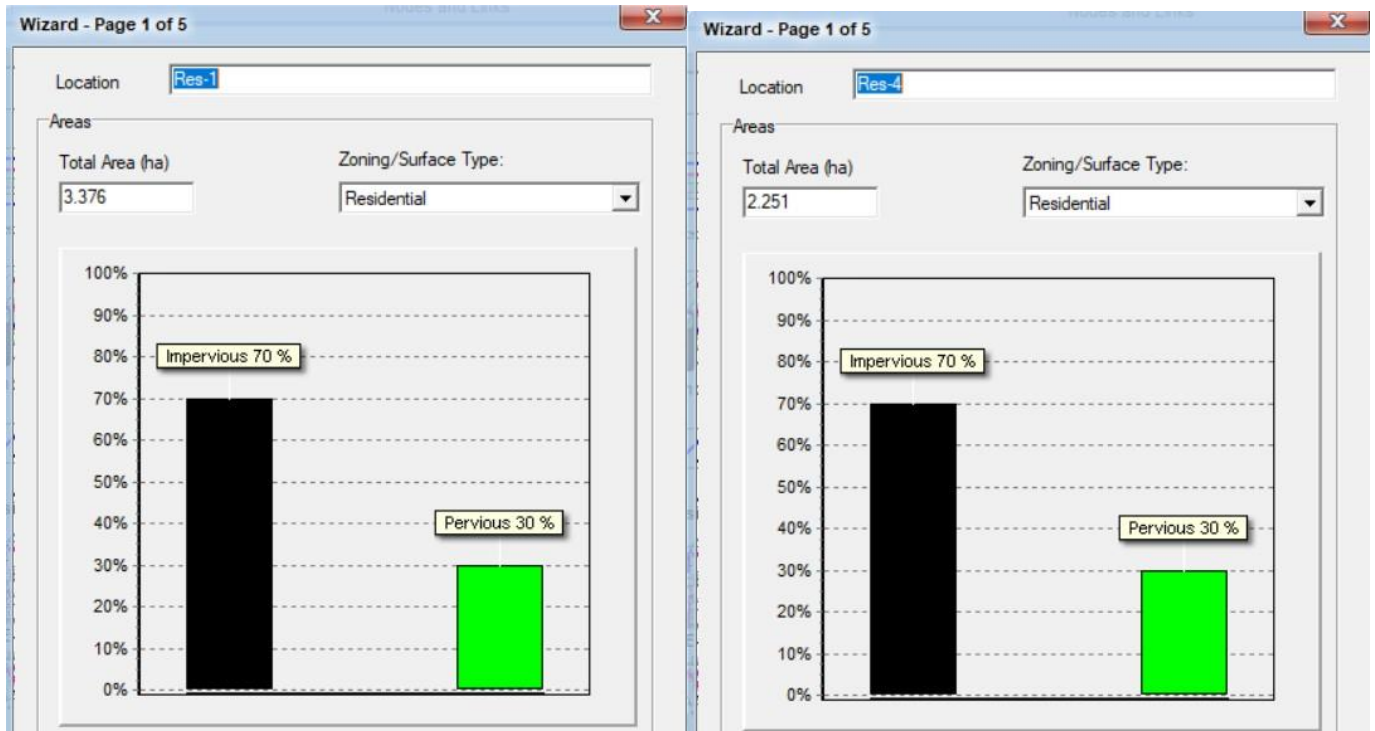
☐ Mean ☒ Stochastically generated

Serial Correlation (R squared): 0.00



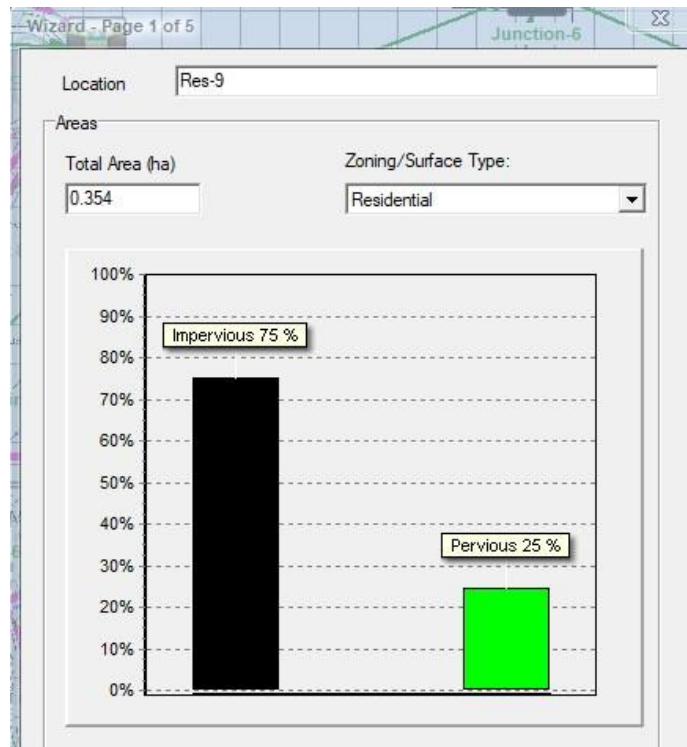
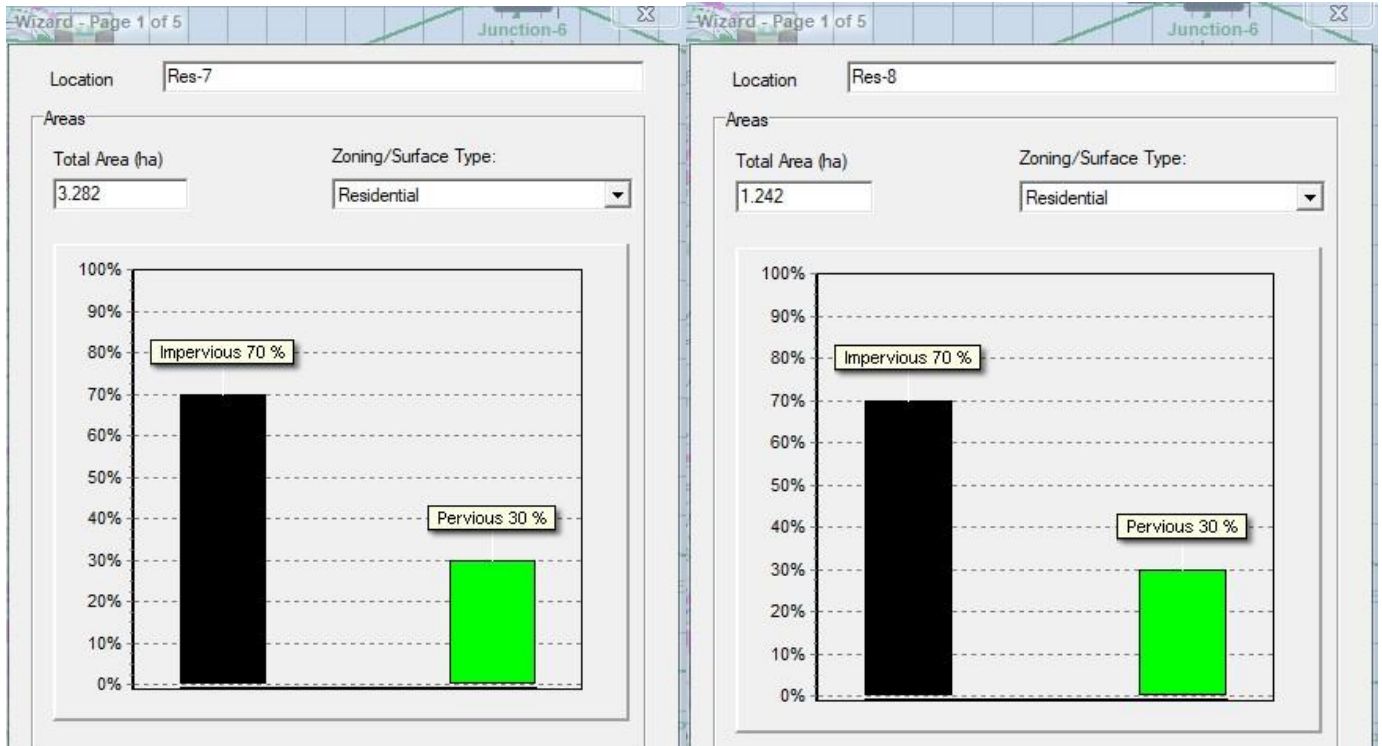
## POST-DEVELOPMENT SOURCE NODE DATA

### SUBDIVISION LOTS



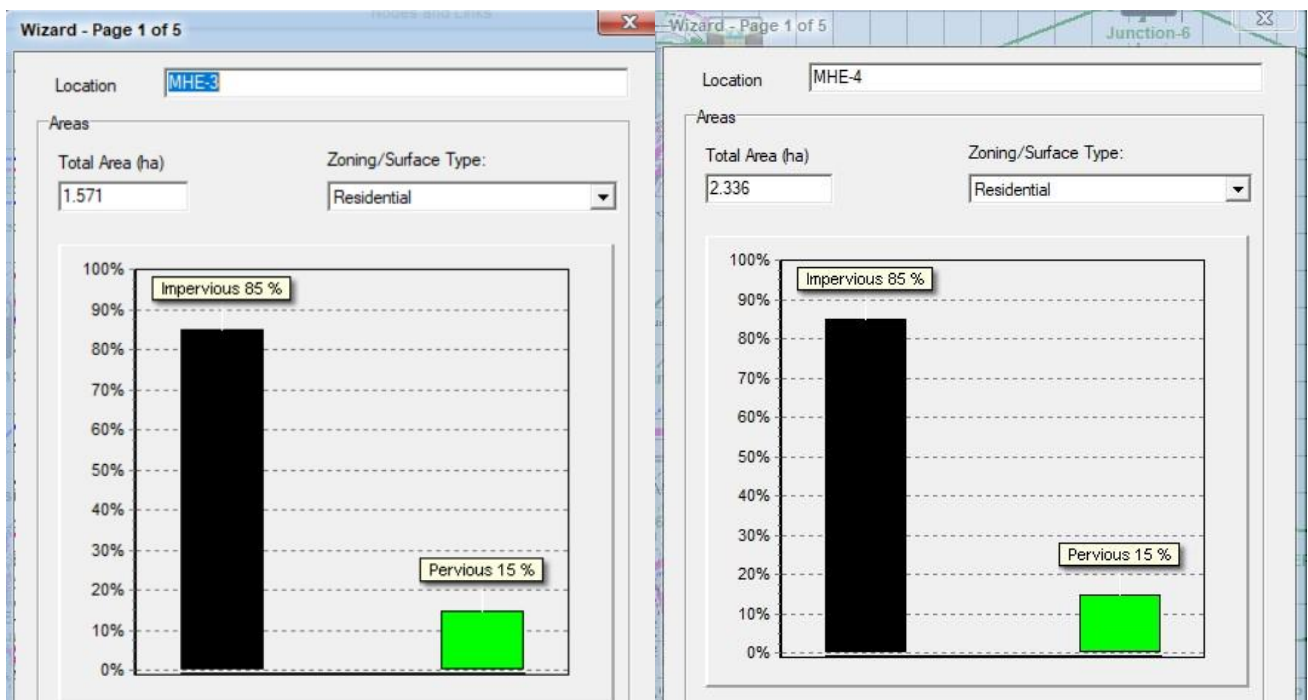
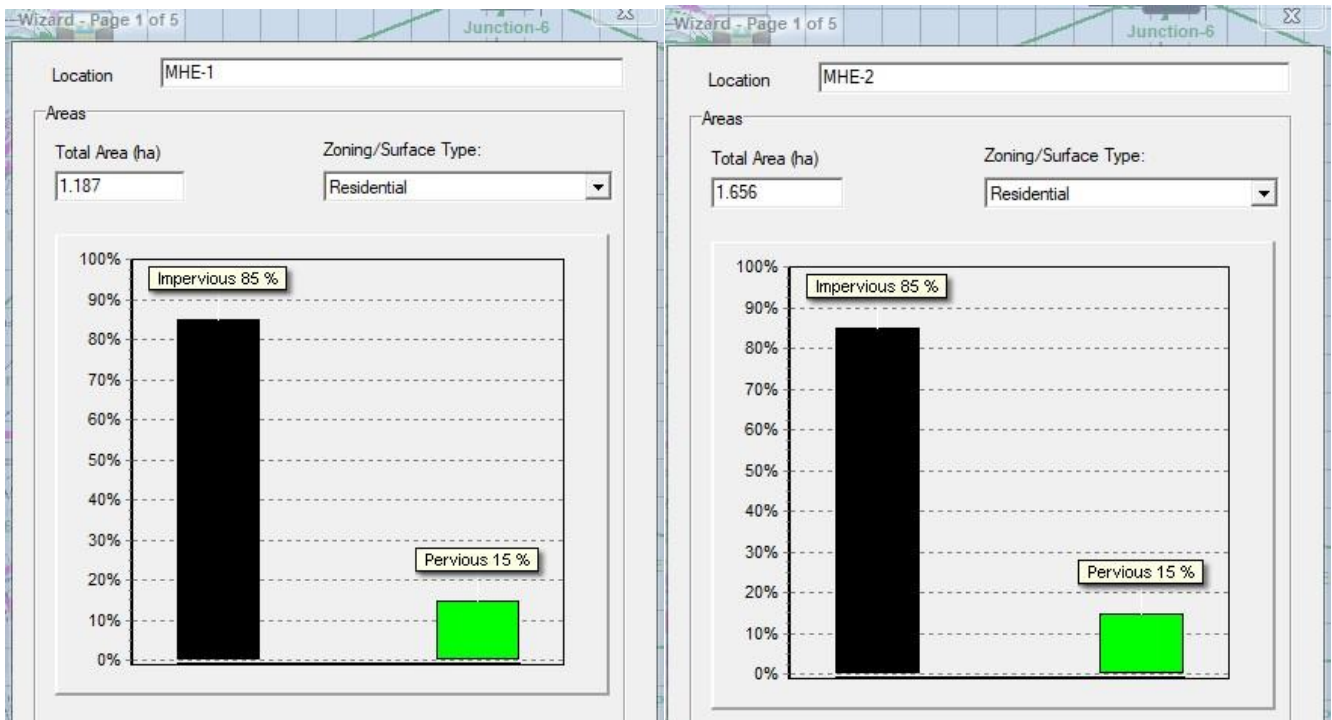
## POST-DEVELOPMENT SOURCE NODE DATA

### SUBDIVISION LOTS



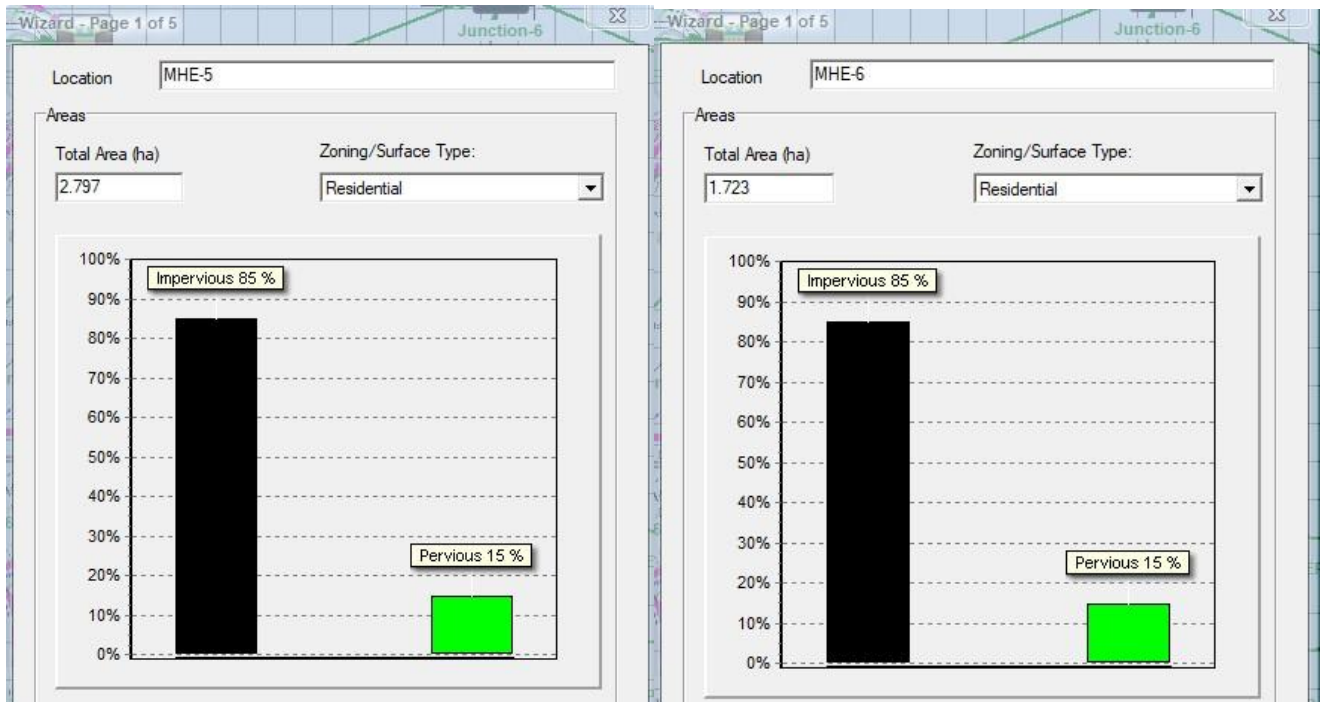
## POST-DEVELOPMENT SOURCE NODE DATA

### MHE DEVELOPMENT



## POST-DEVELOPMENT SOURCE NODE DATA

### MHE DEVELOPMENT



## POST-DEVELOPMENT SOURCE NODE DATA

Properties of Res-1 - Page 2 of 5

### Rainfall-Runoff Parameters

Impervious Area Properties

Rainfall Threshold (mm/day)

Pervious Area Properties

Soil Storage Capacity (mm)

Initial Storage (% of Capacity)

Field Capacity (mm)

Infiltration Capacity Coefficient - a

Infiltration Capacity Exponent - b

Groundwater Properties

Initial Depth (mm)

Daily Recharge Rate (%)

Daily Baseflow Rate (%)

Daily Deep Seepage Rate (%)

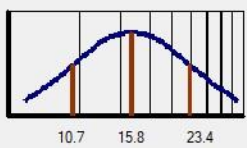
Properties of Res-1 - Page 3 of 5

### Total Suspended Solids

Base Flow Concentration Parameters

Mean (log mg/L)

Std Dev (log mg/L)



Estimation Method

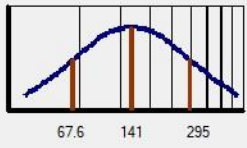
☐ Mean ☒ Stochastically generated

Serial Correlation (R squared)

Storm Flow Concentration Parameters

Mean (log mg/L)

Std Dev (log mg/L)



Estimation Method

☐ Mean ☒ Stochastically generated

Serial Correlation (R squared)

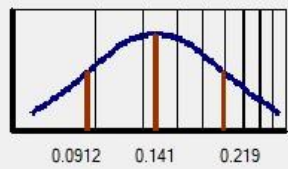
Properties of Res-1 - Page 4 of 5

### Total Phosphorus

Base Flow Concentration Parameters

Mean (log mg/L)

Std Dev (log mg/L)



Estimation Method

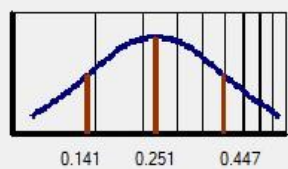
☐ Mean ☒ Stochastically generated

Serial Correlation (R squared)

Storm Flow Concentration Parameters

Mean (log mg/L)

Std Dev (log mg/L)



Estimation Method

☐ Mean ☒ Stochastically generated

Serial Correlation (R squared)

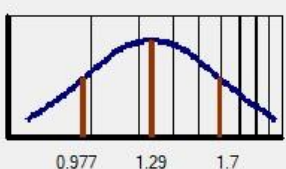
Properties of Res-1 - Page 5 of 5

### Total Nitrogen

Base Flow Concentration Parameters

Mean (log mg/L)

Std Dev (log mg/L)



Estimation Method

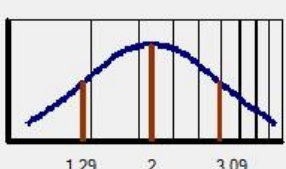
☐ Mean ☒ Stochastically generated

Serial Correlation (R squared)

Storm Flow Concentration Parameters

Mean (log mg/L)

Std Dev (log mg/L)



Estimation Method

☐ Mean ☒ Stochastically generated

Serial Correlation (R squared)



## TREATMENT TRAIN DATA – Biofiltration System (Public)

Properties of Basin-1 (40 x 10m)

Location: Basin-1 (40 x 10m)

|                                                |         |
|------------------------------------------------|---------|
| Inlet Properties                               |         |
| Low Flow By-pass (cubic metres per sec)        | 0.000   |
| High Flow By-pass (cubic metres per sec)       | 100.000 |
| Storage Properties                             |         |
| Extended Detention Depth (metres)              | 0.30    |
| Surface Area (square metres)                   | 445.00  |
| Filter and Media Properties                    |         |
| Filter Area (square metres)                    | 400.00  |
| Unlined Filter Media Perimeter (metres)        | 100.00  |
| Saturated Hydraulic Conductivity (mm/hour)     | 120.00  |
| Filter Depth (metres)                          | 0.40    |
| TN Content of Filter Media (mg/kg)             | 400     |
| Orthophosphate Content of Filter Media (mg/kg) | 40.0    |
| Infiltration Properties                        |         |
| Exfiltration Rate (mm/hr)                      | 0.00    |

|                                                                                   |                                                                     |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Lining Properties                                                                 |                                                                     |
| Is Base Lined?                                                                    | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Vegetation Properties                                                             |                                                                     |
| <input checked="" type="radio"/> Vegetated with Effective Nutrient Removal Plants |                                                                     |
| <input type="radio"/> Vegetated with Ineffective Nutrient Removal Plants          |                                                                     |
| <input type="radio"/> Unvegetated                                                 |                                                                     |
| Outlet Properties                                                                 |                                                                     |
| Overflow Weir Width (metres)                                                      | 20.00                                                               |
| Underdrain Present?                                                               | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Submerged Zone With Carbon Present?                                               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Depth (metres)                                                                    | 0.00                                                                |

Fluxes... Notes... More

Properties of Basin-2 (30m x 10m)

Location: Basin-2 (30m x 10m)

|                                                |         |
|------------------------------------------------|---------|
| Inlet Properties                               |         |
| Low Flow By-pass (cubic metres per sec)        | 0.000   |
| High Flow By-pass (cubic metres per sec)       | 100.000 |
| Storage Properties                             |         |
| Extended Detention Depth (metres)              | 0.30    |
| Surface Area (square metres)                   | 336.00  |
| Filter and Media Properties                    |         |
| Filter Area (square metres)                    | 300.00  |
| Unlined Filter Media Perimeter (metres)        | 80.00   |
| Saturated Hydraulic Conductivity (mm/hour)     | 100.00  |
| Filter Depth (metres)                          | 0.40    |
| TN Content of Filter Media (mg/kg)             | 400     |
| Orthophosphate Content of Filter Media (mg/kg) | 40.0    |
| Infiltration Properties                        |         |
| Exfiltration Rate (mm/hr)                      | 0.00    |

|                                                                                   |                                                                     |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Lining Properties                                                                 |                                                                     |
| Is Base Lined?                                                                    | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Vegetation Properties                                                             |                                                                     |
| <input checked="" type="radio"/> Vegetated with Effective Nutrient Removal Plants |                                                                     |
| <input type="radio"/> Vegetated with Ineffective Nutrient Removal Plants          |                                                                     |
| <input type="radio"/> Unvegetated                                                 |                                                                     |
| Outlet Properties                                                                 |                                                                     |
| Overflow Weir Width (metres)                                                      | 20.00                                                               |
| Underdrain Present?                                                               | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Submerged Zone With Carbon Present?                                               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Depth (metres)                                                                    | 0.00                                                                |

Fluxes... Notes... More

## TREATMENT TRAIN DATA – Biofiltration System (Private)

Properties of Basin-3 (21m x 10m)

Location: Basin-3 (21m x 10m)

|                                                |         |
|------------------------------------------------|---------|
| <b>Inlet Properties</b>                        |         |
| Low Flow By-pass (cubic metres per sec)        | 0.000   |
| High Flow By-pass (cubic metres per sec)       | 100.000 |
| <b>Storage Properties</b>                      |         |
| Extended Detention Depth (metres)              | 0.30    |
| Surface Area (square metres)                   | 239.00  |
| <b>Filter and Media Properties</b>             |         |
| Filter Area (square metres)                    | 210.00  |
| Unlined Filter Media Perimeter (metres)        | 62.00   |
| Saturated Hydraulic Conductivity (mm/hour)     | 100.00  |
| Filter Depth (metres)                          | 0.40    |
| TN Content of Filter Media (mg/kg)             | 400     |
| Orthophosphate Content of Filter Media (mg/kg) | 40.0    |
| <b>Infiltration Properties</b>                 |         |
| Exfiltration Rate (mm/hr)                      | 0.00    |

|                                                                                   |                                                                     |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>Lining Properties</b>                                                          |                                                                     |
| Is Base Lined?                                                                    | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <b>Vegetation Properties</b>                                                      |                                                                     |
| <input checked="" type="radio"/> Vegetated with Effective Nutrient Removal Plants |                                                                     |
| <input type="radio"/> Vegetated with Ineffective Nutrient Removal Plants          |                                                                     |
| <input type="radio"/> Unvegetated                                                 |                                                                     |
| <b>Outlet Properties</b>                                                          |                                                                     |
| Overflow Weir Width (metres)                                                      | 10.00                                                               |
| Underdrain Present?                                                               | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Submerged Zone With Carbon Present?                                               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Depth (metres)                                                                    | 0.00                                                                |

Fluxes... Notes... More

Properties of Basin-4 (45m x 5m)

Location: Basin-4 (45m x 5m)

|                                                |         |
|------------------------------------------------|---------|
| <b>Inlet Properties</b>                        |         |
| Low Flow By-pass (cubic metres per sec)        | 0.000   |
| High Flow By-pass (cubic metres per sec)       | 100.000 |
| <b>Storage Properties</b>                      |         |
| Extended Detention Depth (metres)              | 0.30    |
| Surface Area (square metres)                   | 270.00  |
| <b>Filter and Media Properties</b>             |         |
| Filter Area (square metres)                    | 225.00  |
| Unlined Filter Media Perimeter (metres)        | 100.00  |
| Saturated Hydraulic Conductivity (mm/hour)     | 100.00  |
| Filter Depth (metres)                          | 0.40    |
| TN Content of Filter Media (mg/kg)             | 400     |
| Orthophosphate Content of Filter Media (mg/kg) | 40.0    |
| <b>Infiltration Properties</b>                 |         |
| Exfiltration Rate (mm/hr)                      | 0.00    |

|                                                                                   |                                                                     |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>Lining Properties</b>                                                          |                                                                     |
| Is Base Lined?                                                                    | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <b>Vegetation Properties</b>                                                      |                                                                     |
| <input checked="" type="radio"/> Vegetated with Effective Nutrient Removal Plants |                                                                     |
| <input type="radio"/> Vegetated with Ineffective Nutrient Removal Plants          |                                                                     |
| <input type="radio"/> Unvegetated                                                 |                                                                     |
| <b>Outlet Properties</b>                                                          |                                                                     |
| Overflow Weir Width (metres)                                                      | 20.00                                                               |
| Underdrain Present?                                                               | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Submerged Zone With Carbon Present?                                               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Depth (metres)                                                                    | 0.00                                                                |

Fluxes... Notes... More

## TREATMENT TRAIN DATA – Biofiltration System (Public)

Properties of Basin-5 (20m x 5m)

Location: Basin-5 (20m x 5m)

**Inlet Properties**

Low Flow By-pass (cubic metres per sec): 0.000

High Flow By-pass (cubic metres per sec): 100.000

**Storage Properties**

Extended Detention Depth (metres): 0.30

Surface Area (square metres): 123.00

**Filter and Media Properties**

Filter Area (square metres): 100.00

Unlined Filter Media Perimeter (metres): 50.00

Saturated Hydraulic Conductivity (mm/hour): 100.00

Filter Depth (metres): 0.40

TN Content of Filter Media (mg/kg): 400

Orthophosphate Content of Filter Media (mg/kg): 40.0

**Infiltration Properties**

Exfiltration Rate (mm/hr): 0.00

**Lining Properties**

Is Base Lined? ☒ Yes ☐ No

**Vegetation Properties**

☒ Vegetated with Effective Nutrient Removal Plants

☐ Vegetated with Ineffective Nutrient Removal Plants

☐ Unvegetated

**Outlet Properties**

Overflow Weir Width (metres): 10.00

Underdrain Present? ☒ Yes ☐ No

Submerged Zone With Carbon Present? ☐ Yes ☒ No

Depth (metres): 0.00

Fluxes... Notes... More

Properties of Basin-6 (20m x 8m)

Location: Basin-6 (20m x 8m)

**Inlet Properties**

Low Flow By-pass (cubic metres per sec): 0.000

High Flow By-pass (cubic metres per sec): 100.000

**Storage Properties**

Extended Detention Depth (metres): 0.30

Surface Area (square metres): 186.00

**Filter and Media Properties**

Filter Area (square metres): 160.00

Unlined Filter Media Perimeter (metres): 56.00

Saturated Hydraulic Conductivity (mm/hour): 100.00

Filter Depth (metres): 0.40

TN Content of Filter Media (mg/kg): 400

Orthophosphate Content of Filter Media (mg/kg): 40.0

**Infiltration Properties**

Exfiltration Rate (mm/hr): 0.00

**Lining Properties**

Is Base Lined? ☒ Yes ☐ No

**Vegetation Properties**

☒ Vegetated with Effective Nutrient Removal Plants

☐ Vegetated with Ineffective Nutrient Removal Plants

☐ Unvegetated

**Outlet Properties**

Overflow Weir Width (metres): 10.00

Underdrain Present? ☒ Yes ☐ No

Submerged Zone With Carbon Present? ☐ Yes ☒ No

Depth (metres): 0.00

Fluxes... Notes... More



## TREATMENT TRAIN DATA – Biofiltration System (Public)

Properties of Basin-7 (50m x 8m)

Location

|                                                |                                      |
|------------------------------------------------|--------------------------------------|
| <b>Inlet Properties</b>                        |                                      |
| Low Flow By-pass (cubic metres per sec)        | <input type="text" value="0.000"/>   |
| High Flow By-pass (cubic metres per sec)       | <input type="text" value="100.000"/> |
| <b>Storage Properties</b>                      |                                      |
| Extended Detention Depth (metres)              | <input type="text" value="0.30"/>    |
| Surface Area (square metres)                   | <input type="text" value="453.00"/>  |
| <b>Filter and Media Properties</b>             |                                      |
| Filter Area (square metres)                    | <input type="text" value="400.00"/>  |
| Unlined Filter Media Perimeter (metres)        | <input type="text" value="116.00"/>  |
| Saturated Hydraulic Conductivity (mm/hour)     | <input type="text" value="100.00"/>  |
| Filter Depth (metres)                          | <input type="text" value="0.40"/>    |
| TN Content of Filter Media (mg/kg)             | <input type="text" value="400"/>     |
| Orthophosphate Content of Filter Media (mg/kg) | <input type="text" value="40.0"/>    |
| <b>Infiltration Properties</b>                 |                                      |
| Exfiltration Rate (mm/hr)                      | <input type="text" value="0.00"/>    |

|                                                                                   |                                                                     |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>Lining Properties</b>                                                          |                                                                     |
| Is Base Lined?                                                                    | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <b>Vegetation Properties</b>                                                      |                                                                     |
| <input checked="" type="radio"/> Vegetated with Effective Nutrient Removal Plants |                                                                     |
| <input type="radio"/> Vegetated with Ineffective Nutrient Removal Plants          |                                                                     |
| <input type="radio"/> Unvegetated                                                 |                                                                     |
| <b>Outlet Properties</b>                                                          |                                                                     |
| Overflow Weir Width (metres)                                                      | <input type="text" value="20.00"/>                                  |
| Underdrain Present?                                                               | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Submerged Zone With Carbon Present?                                               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Depth (metres)                                                                    | <input type="text" value="0.00"/>                                   |

Fluxes... Notes... More

Properties of Basin-8

Location

|                                                |                                      |
|------------------------------------------------|--------------------------------------|
| <b>Inlet Properties</b>                        |                                      |
| Low Flow By-pass (cubic metres per sec)        | <input type="text" value="0.000"/>   |
| High Flow By-pass (cubic metres per sec)       | <input type="text" value="100.000"/> |
| <b>Storage Properties</b>                      |                                      |
| Extended Detention Depth (metres)              | <input type="text" value="0.30"/>    |
| Surface Area (square metres)                   | <input type="text" value="269.00"/>  |
| <b>Filter and Media Properties</b>             |                                      |
| Filter Area (square metres)                    | <input type="text" value="240.00"/>  |
| Unlined Filter Media Perimeter (metres)        | <input type="text" value="63.00"/>   |
| Saturated Hydraulic Conductivity (mm/hour)     | <input type="text" value="100.00"/>  |
| Filter Depth (metres)                          | <input type="text" value="0.40"/>    |
| TN Content of Filter Media (mg/kg)             | <input type="text" value="400"/>     |
| Orthophosphate Content of Filter Media (mg/kg) | <input type="text" value="40.0"/>    |
| <b>Infiltration Properties</b>                 |                                      |
| Exfiltration Rate (mm/hr)                      | <input type="text" value="0.00"/>    |

|                                                                                   |                                                                     |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>Lining Properties</b>                                                          |                                                                     |
| Is Base Lined?                                                                    | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <b>Vegetation Properties</b>                                                      |                                                                     |
| <input checked="" type="radio"/> Vegetated with Effective Nutrient Removal Plants |                                                                     |
| <input type="radio"/> Vegetated with Ineffective Nutrient Removal Plants          |                                                                     |
| <input type="radio"/> Unvegetated                                                 |                                                                     |
| <b>Outlet Properties</b>                                                          |                                                                     |
| Overflow Weir Width (metres)                                                      | <input type="text" value="10.00"/>                                  |
| Underdrain Present?                                                               | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Submerged Zone With Carbon Present?                                               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Depth (metres)                                                                    | <input type="text" value="0.00"/>                                   |

Fluxes... Notes... More



## TREATMENT TRAIN DATA – GPT-1 (Private)

Location: [IVR.100 Atlan Vortceptor (SQIDEP Verified)]

**Inlet Properties**

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

High Flow By-pass (cubic metres per sec): 0.10000

**Target Element**

☒ Gross Pollutants (kg/ML) ☐ Total Phosphorus (mg/L)

☐ Total Suspended Solids (mg/L) ☐ Total Nitrogen (mg/L)

**Gross Pollutants (kg/ML)**

**Transfer Functions**

☒ Concentration Based Capture Efficiency ☐ Flow Based Capture Efficiency

☐ Both

**Concentration Based Capture Efficiency**

| Input   | Output |
|---------|--------|
| 0.0000  | 0.0000 |
| 15.0000 | 0.0000 |

**Flow Based Capture Efficiency**

| Inflow (m <sup>3</sup> /s) | % Capture |
|----------------------------|-----------|
| 0.0000                     | 100.0000  |
| 1.0000                     | 100.0000  |

Location: [IVR.100 Atlan Vortceptor (SQIDEP Verified)]

**Inlet Properties**

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

High Flow By-pass (cubic metres per sec): 0.10000

**Target Element**

☐ Gross Pollutants (kg/ML) ☐ Total Phosphorus (mg/L)

☒ Total Suspended Solids (mg/L) ☐ Total Nitrogen (mg/L)

**Total Suspended Solids (mg/L)**

**Transfer Functions**

☒ Concentration Based Capture Efficiency ☐ Flow Based Capture Efficiency

☐ Both

**Concentration Based Capture Efficiency**

| Input    | Output |
|----------|--------|
| 0.0000   | 0.0000 |
| 100.0000 | 7.0000 |

**Flow Based Capture Efficiency**

| Inflow (m <sup>3</sup> /s) | % Capture |
|----------------------------|-----------|
| 0.0000                     | 100.0000  |
| 1.0000                     | 100.0000  |

Location: [IVR.100 Atlan Vortceptor (SQIDEP Verified)]

**Inlet Properties**

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

High Flow By-pass (cubic metres per sec): 0.10000

**Target Element**

☐ Gross Pollutants (kg/ML) ☒ Total Phosphorus (mg/L)

☐ Total Suspended Solids (mg/L) ☐ Total Nitrogen (mg/L)

**Total Phosphorus (mg/L)**

**Transfer Functions**

☒ Concentration Based Capture Efficiency ☐ Flow Based Capture Efficiency

☐ Both

**Concentration Based Capture Efficiency**

| Input    | Output  |
|----------|---------|
| 0.0000   | 0.0000  |
| 100.0000 | 14.0000 |

**Flow Based Capture Efficiency**

| Inflow (m <sup>3</sup> /s) | % Capture |
|----------------------------|-----------|
| 0.0000                     | 100.0000  |
| 1.0000                     | 100.0000  |

Location: [IVR.100 Atlan Vortceptor (SQIDEP Verified)]

**Inlet Properties**

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

High Flow By-pass (cubic metres per sec): 0.10000

**Target Element**

☐ Gross Pollutants (kg/ML) ☐ Total Phosphorus (mg/L)

☐ Total Suspended Solids (mg/L) ☒ Total Nitrogen (mg/L)

**Total Nitrogen (mg/L)**

**Transfer Functions**

☒ Concentration Based Capture Efficiency ☐ Flow Based Capture Efficiency

☐ Both

**Concentration Based Capture Efficiency**

| Input   | Output |
|---------|--------|
| 0.0000  | 0.0000 |
| 10.0000 | 5.1000 |

**Flow Based Capture Efficiency**

| Inflow (m <sup>3</sup> /s) | % Capture |
|----------------------------|-----------|
| 0.0000                     | 100.0000  |
| 1.0000                     | 100.0000  |

## TREATMENT TRAIN DATA – GPT-2 (Private)

Location: [IVR.160 Atlan Vortceptor (SQIDEP Verified)]

**Inlet Properties**

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

High Flow By-pass (cubic metres per sec): 0.16000

**Target Element**

☒ Gross Pollutants (kg/ML) ☐ Total Phosphorus (mg/L)

☐ Total Suspended Solids (mg/L) ☐ Total Nitrogen (mg/L)

**Gross Pollutants (kg/ML)**

**Transfer Functions**

☒ Concentration Based Capture Efficiency ☐ Flow Based Capture Efficiency

☐ Both

**Concentration Based Capture Efficiency**

| Input   | Output |
|---------|--------|
| 0.0000  | 0.0000 |
| 15.0000 | 0.0000 |

**Flow Based Capture Efficiency**

| Inflow (m <sup>3</sup> /s) | % Capture |
|----------------------------|-----------|
|                            |           |

## TREATMENT TRAIN DATA – GPT-3 (Private)

Location: IVR.100 Atlan Vortceptor (SQIDEP Verified)

Inlet Properties  
Low Flow By-pass (cubic metres per sec) 0.00000  
High Flow By-pass (cubic metres per sec) 0.10000

Target Element  
☒ Gross Pollutants (kg/ML)    ☐ Total Phosphorus (mg/L)  
☐ Total Suspended Solids (mg/L)    ☐ Total Nitrogen (mg/L)

Gross Pollutants (kg/ML)  
Transfer Functions  
☒ Concentration Based Capture Efficiency    ☐ Flow Based Capture Efficiency  
☐ Both

Concentration Based Capture Efficiency    Flow Based Capture Efficiency

| Input   | Output |
|---------|--------|
| 0.0000  | 0.0000 |
| 15.0000 | 0.0000 |

| Inflow (m <sup>3</sup> /s) | % Capture |
|----------------------------|-----------|
| 0.0000                     | 100.0000  |
| 1.0000                     | 100.0000  |

Location: IVR.100 Atlan Vortceptor (SQIDEP Verified)

Inlet Properties  
Low Flow By-pass (cubic metres per sec) 0.00000  
High Flow By-pass (cubic metres per sec) 0.10000

Target Element  
☐ Gross Pollutants (kg/ML)    ☒ Total Phosphorus (mg/L)  
☐ Total Suspended Solids (mg/L)    ☐ Total Nitrogen (mg/L)

Total Phosphorus (mg/L)  
Transfer Functions  
☒ Concentration Based Capture Efficiency    ☐ Flow Based Capture Efficiency  
☐ Both

Concentration Based Capture Efficiency    Flow Based Capture Efficiency

| Input    | Output  |
|----------|---------|
| 0.0000   | 0.0000  |
| 100.0000 | 14.0000 |

| Inflow (m <sup>3</sup> /s) | % Capture |
|----------------------------|-----------|
| 0.0000                     | 100.0000  |
| 1.0000                     | 100.0000  |

## TREATMENT TRAIN DATA – GPT-4 (Private)

Location: SVO.180 Atlan Vortceptor (SQIDEP Verified)

Inlet Properties  
Low Flow By-pass (cubic metres per sec) 0.00000  
High Flow By-pass (cubic metres per sec) 0.18000

Target Element  
☒ Gross Pollutants (kg/ML)    ☐ Total Phosphorus (mg/L)  
☐ Total Suspended Solids (mg/L)    ☐ Total Nitrogen (mg/L)

Gross Pollutants (kg/ML)  
Transfer Functions  
☒ Concentration Based Capture Efficiency    ☐ Flow Based Capture Efficiency  
☐ Both

Concentration Based Capture Efficiency    Flow Based Capture Efficiency

| Input   | Output |
|---------|--------|
| 0.0000  | 0.0000 |
| 15.0000 | 0.0000 |

| Inflow (m <sup>3</sup> /s) | % Capture |
|----------------------------|-----------|
| 0.0000                     | 100.0000  |
| 1.0000                     | 100.0000  |

Location: SVO.180 Atlan Vortceptor (SQIDEP Verified)

Inlet Properties  
Low Flow By-pass (cubic metres per sec) 0.00000  
High Flow By-pass (cubic metres per sec) 0.18000

Target Element  
☐ Gross Pollutants (kg/ML)    ☒ Total Phosphorus (mg/L)  
☐ Total Suspended Solids (mg/L)    ☐ Total Nitrogen (mg/L)

Total Phosphorus (mg/L)  
Transfer Functions  
☒ Concentration Based Capture Efficiency    ☐ Flow Based Capture Efficiency  
☐ Both

Concentration Based Capture Efficiency    Flow Based Capture Efficiency

| Input    | Output  |
|----------|---------|
| 0.0000   | 0.0000  |
| 100.0000 | 14.0000 |

| Inflow (m <sup>3</sup> /s) | % Capture |
|----------------------------|-----------|
| 0.0000                     | 100.0000  |
| 1.0000                     | 100.0000  |

## TREATMENT TRAIN EFFECTIVENESS

### Post Development Receiving Node

| Treatment Train Effectiveness - Post-Development Node |         |       |               |      |             |      |
|-------------------------------------------------------|---------|-------|---------------|------|-------------|------|
|                                                       | Sources |       | Residual Load |      | % Reduction |      |
|                                                       | Pre     | Post  | Pre           | Post | Pre         | Post |
| Flow (ML/yr)                                          | 142     | 280   | 142           | 277  | 0           | 1.07 |
| Total Suspended Solids (kg/yr)                        | 18600   | 49700 | 18600         | 8560 | 0           | 82.8 |
| Total Phosphorus (kg/yr)                              | 80.2    | 81.4  | 80.2          | 26.5 | 0           | 67.4 |
| Total Nitrogen (kg/yr)                                | 406     | 605   | 406           | 320  | 0           | 47.1 |
| Gross Pollutants (kg/yr)                              | 703     | 6530  | 703           | 135  | 0           | 97.9 |

☒ Include Pre-Development

Gross Pollutants = 100% (PMHC Target) → **Treatment Train Effectiveness Result = 97.9%**

Total Suspended Solids = 80% (PMHC Target) → **Treatment Train Effectiveness Result = 82.8%**

Total Phosphorus = 60% (PMHC Target) → **Treatment Train Effectiveness Result = 67.4%**

Total Nitrogen = 45% (PMHC Target) → **Treatment Train Effectiveness Result = 47.1%**

**N.B. – Modelling for Catchment Area Res-9 is shown to bypassing Water Quality Treatment & connecting directly to the Post-Development Receiving Node, which has influenced the Gross Pollutants % reduction (97.9%). The TSS, TP & TN % reductions comply with Port Macquarie Hastings Council AUS-SPEC D7 Stormwater Quality Target Reduction Loading & NorBE**

**Basins 2 & 3 along with G.P.T's 1-4 Water Quality devices to be owned, operated & maintained by Private Developers**