

Summary

Site	Project Name	Project Title	Storm Type
Pre-Development	3103	Coral Sophia	avg-annual
Post-Development	3103 Coral Sophia Proposed	Coral Sophia Proposed	avg-annual

Water Balance Comparison

Site	Site Area	Site Rainfall In	Site Infiltration	Site Evapotranspiration	External Outflow	Rainfall Reduction
		(mm) (m ³)	(mm) (m ³)	(mm) (m ³)	(mm) (m ³)	(mm) (%)
Pre-Development Total	0.37 ha	944.70 mm	56.76 mm	263.08 mm	626.34 mm	318.36 mm
		3,514.28 m ³	211.15 m ³	978.66 m ³	2,330.00 m ³	33.70 %
Post-Development Total	0.37 ha	944.70 mm	137.24 mm	224.45 mm	579.95 mm	364.75 mm
		3,485.94 m ³	506.41 m ³	828.23 m ³	2,140.00 m ³	38.61 %
Difference	0.00 ha	0.00 mm	80.48 mm	-38.63 mm	-46.40 mm	46.40 mm
		-28.34 m ³	295.26 m ³	-150.43 m ³	-190.00 m ³	4.91 %
Difference	-0.81 %	0.00 %	141.79 %	-14.68 %	-7.41 %	14.57 %

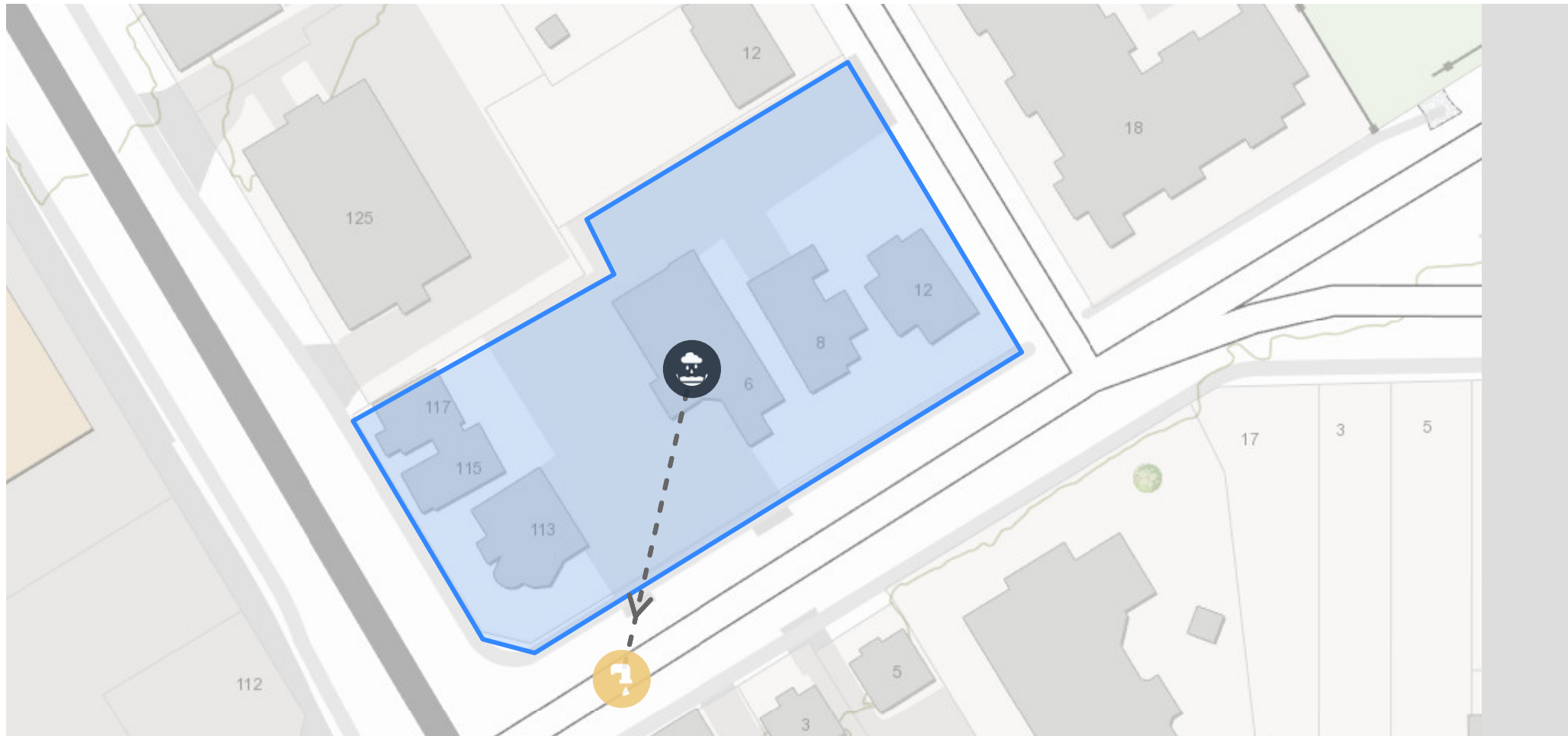
Water Balance | Pre-Development

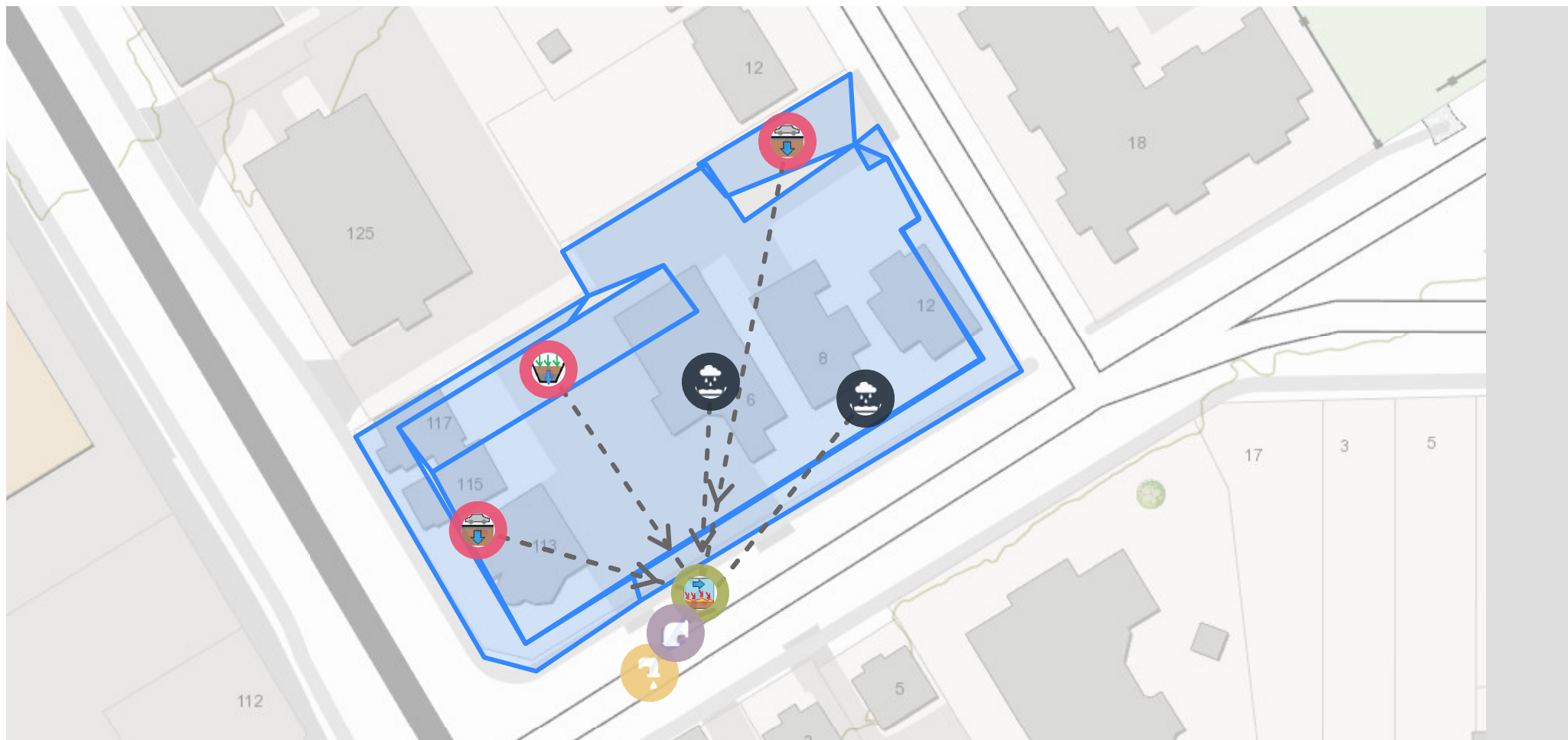
Catchment	Site Area	Site Rainfall In	Site Infiltration	Site Evapotranspiration	External Outflow	Rainfall Reduction
		(mm) (m ³)	(mm) (m ³)	(mm) (m ³)	(mm) (m ³)	(mm) (%)
1	0.37 ha	944.70 mm 3,514.28 m ³	56.76 mm 211.15 m ³	263.08 mm 978.66 m ³	626.34 mm 2,330.00 m ³	318.36 mm 33.70 %
TOTAL	0.37 ha	944.70 mm 3,514.28 m ³	56.76 mm 211.15 m ³	263.08 mm 978.66 m ³	626.34 mm 2,330.00 m ³	318.36 mm 33.70 %

Water Balance | Post-Development

Catchment	Site Area	Site Rainfall In	Site Infiltration	Site Evapotranspiration	External Outflow	Rainfall Reduction
		(mm) (m ³)	(mm) (m ³)	(mm) (m ³)	(mm) (m ³)	(mm) (%)
1	0.37 ha	944.70 mm 3,485.94 m ³	137.24 mm 506.41 m ³	224.45 mm 828.23 m ³	579.95 mm 2,140.00 m ³	364.75 mm 38.61 %
TOTAL	0.37 ha	944.70 mm 3,485.94 m ³	137.24 mm 506.41 m ³	224.45 mm 828.23 m ³	579.95 mm 2,140.00 m ³	364.75 mm 38.61 %

Map | Pre-Development





LID Summary | Post-Development

Element	Type	LID Area	Drawdown Time	Effective Impervious to Pervious Ratio	FLOW	TSS	TP
					Flow In (m ³)	Load In (kg)	Load In (kg)
					Flow Out (m ³)	Load Out (kg)	Load Out (kg)
					Actual Reduction (%)	Actual Reduction (%)	Actual Reduction (%)
Filter	Sorbitive-Media				1,980.000 m ³	22.642 kg	0.204 kg
					1,980.000 m ³	3.396 kg	0.115 kg
					0.000 %	85.000 %	43.900 %
Per pave#1	Perm-Pavement	0.035 ha	20.000 hrs	1.000	330.645 m ³	23.905 kg	0.073 kg
					110.000 m ³	1.988 kg	0.010 kg
					66.732 %	91.683 %	86.693 %
Perm Pave #2	Perm-Pavement	0.016 ha	20.000 hrs	1.000	151.152 m ³	10.918 kg	0.033 kg
					10.000 m ³	0.181 kg	0.001 kg
					93.384 %	98.346 %	97.354 %
green roof	Bioretention	0.034 ha	0.200 hrs	1.000	321.198 m ³	8.672 kg	0.064 kg
					40.000 m ³	0.270 kg	0.012 kg
					87.547 %	96.887 %	81.943 %

Loading Summary TSS | Pre Development

Catchment	Total Catchment TSS Removal	Peak Outflow	Generated	Outgoing
			Total Flow (m ³)	Total Flow (m ³)
			Average Concentration (mg/l)	Average Concentration (mg/l)
			Total Load (kg)	Total Load (kg)
Catchment 1	0.000 %	0.047 m ³ /s	2,330.000 m ³	2,327.000 m ³
			55.643 mg/l	55.715 mg/l
			129.649 kg	129.649 kg
Total	0.000 %	0.047 m ³ /s	2,330.000 m ³	2,327.000 m ³
			55.643 mg/l	55.715 mg/l
			129.649 kg	129.649 kg

Loading Summary TSS | Post Development

Catchment	Total Catchment TSS Removal	Peak Outflow	Generated	Outgoing
			Total Flow (m ³)	Total Flow (m ³)
			Average Concentration (mg/l)	Average Concentration (mg/l)
			Total Load (kg)	Total Load (kg)
Catchment 1	82.735 %	0.044 m ³ /s	2,792.995 m ³	2,143.000 m ³
			26.096 mg/l	5.872 mg/l
			72.886 kg	12.583 kg
Total	82.735 %	0.044 m ³ /s	2,792.995 m ³	2,143.000 m ³
			26.096 mg/l	5.872 mg/l
			72.886 kg	12.583 kg

Loading Summary TP | Pre Development

Catchment	Total Catchment TP Removal	Peak Outflow	Generated	Outgoing
			Total Flow (m ³)	Total Flow (m ³)
			Average Concentration (mg/l)	Average Concentration (mg/l)
			Total Load (kg)	Total Load (kg)
Catchment 1	0.000 %	0.047 m ³ /s	2,330.000 m ³	2,327.000 m ³
			0.190 mg/l	0.190 mg/l
			0.442 kg	0.442 kg
Total	0.000 %	0.047 m ³ /s	2,330.000 m ³	2,327.000 m ³
			0.190 mg/l	0.190 mg/l
			0.442 kg	0.442 kg

Loading Summary TP | Post Development

Catchment	Total Catchment TP Removal	Peak Outflow	Generated	Outgoing
			Total Flow (m ³)	Total Flow (m ³)
			Average Concentration (mg/l)	Average Concentration (mg/l)
			Total Load (kg)	Total Load (kg)
Catchment 1	61.076 %	0.044 m ³ /s	2,792.995 m ³	2,143.000 m ³
			0.140 mg/l	0.071 mg/l
			0.390 kg	0.152 kg
Total	61.076 %	0.044 m ³ /s	2,792.995 m ³	2,143.000 m ³
			0.140 mg/l	0.071 mg/l
			0.390 kg	0.152 kg

Peak Flow | Pre-Development

Catchment	Element	Description	Peak outflow
1	Sophia Street Storm	MAXIMUM FLOW at	0.047 m ³ /s
	Pre-Development Site	PEAK RUNOFF FLOW from	0.05 m ³ /s

Peak Flow | Post-Development

Catchment	Element	Description	Peak outflow
1	Sophia Street Storm	MAXIMUM FLOW at	0.044 m ³ /s
	Filter	MAXIMUM LATERAL INFLOW at	0.040 m ³ /s
	Storm Outfall	MAXIMUM FLOW in	0.040 m ³ /s
	Per pave#1	PEAK RUNOFF FLOW from	0.00 m ³ /s
	Building, Dog Patch, Loading Bay	PEAK RUNOFF FLOW from	0.03 m ³ /s
	East & South Landscaped Area	PEAK RUNOFF FLOW from	0.00 m ³ /s
	Perm Pave #2	PEAK RUNOFF FLOW from	0.00 m ³ /s
	green roof	PEAK RUNOFF FLOW from	0.00 m ³ /s

Loading TSS | Pre Development

TSS - Catchment 1

Name	LID Type (removal)	Peak Outflow	Incoming	Outgoing
			Total Flow (m ³)	Total Flow (m ³)
			Concentration (mg/l)	Concentration (mg/l)
			Total Load (kg)	Total Load (kg)
Pre-Development Site	0 %	0.05 m ³ /s	3,514.284 m ³	2,330.000 m ³
			55.643 mg/l	55.643 mg/l
			195.547 kg	129.649 kg
Sophia Street Storm	0 %	0.047 m ³ /s	2,327.000 m ³	2,327.000 m ³
			55.715 mg/l	55.715 mg/l
			129.649 kg	129.649 kg

Loading TSS | Post Development

TSS - Catchment 1

Name	LID Type (removal)	Peak Outflow	Incoming	Outgoing
			Total Flow (m ³)	Total Flow (m ³)
			Concentration (mg/l)	Concentration (mg/l)
			Total Load (kg)	Total Load (kg)
Building, Dog Patch, Loading Bay	0 %	0.03 m ³ /s	2,333.409 m ³	1,830.000 m ³
			11.040 mg/l	11.040 mg/l
			25.761 kg	20.203 kg
East & South Landscaped Area	0 %	0 m ³ /s	349.539 m ³	160.000 m ³
			57.420 mg/l	57.420 mg/l
			20.071 kg	9.187 kg
Per pave#1	75 %	0 m ³ /s	330.645 m ³	110.000 m ³
			72.297 mg/l	18.074 mg/l
			23.905 kg	1.988 kg
Perm Pave #2	75 %	0 m ³ /s	151.152 m ³	10.000 m ³
			72.234 mg/l	18.059 mg/l
			10.918 kg	0.181 kg
green roof	75 %	0 m ³ /s	321.198 m ³	40.000 m ³

			27.000 mg/l	6.750 mg/l
			8.672 kg	0.270 kg
Filter	85 %	0.04 m³/s	1,980.000 m³	1,980.000 m³
			11.435 mg/l	1.715 mg/l
			22.642 kg	3.396 kg
Storm Outfall	0 %	0.04 m³/s	1,980.000 m³	1,980.000 m³
			1.715 mg/l	1.715 mg/l
			3.396 kg	3.396 kg
Sophia Street Storm	0 %	0.044 m³/s	2,143.000 m³	2,143.000 m³
			5.872 mg/l	5.872 mg/l
			12.583 kg	12.583 kg

TP - Catchment 1

Name	LID Type	Peak Outflow	Incoming	Outgoing
			Total Flow (m ³)	Total Flow (m ³)
			Concentration (mg/l)	Concentration (mg/l)
			Total Load (kg)	Total Load (kg)
Pre-Development Site	0 %	0.05 m ³ /s	3,514.284 m ³	2,330.000 m ³
			0.190 mg/l	0.190 mg/l
			0.666 kg	0.442 kg
Sophia Street Storm	0 %	0.047 m ³ /s	2,327.000 m ³	2,327.000 m ³
			0.190 mg/l	0.190 mg/l
			0.442 kg	0.442 kg

Loading TP | Post Development

TP - Catchment 1

Name	LID Type	Peak Outflow	Incoming	Outgoing
			Total Flow (m ³)	Total Flow (m ³)
			Concentration (mg/l)	Concentration (mg/l)
			Total Load (kg)	Total Load (kg)
Building, Dog Patch, Loading Bay	0 %	0.03 m ³ /s	2,333.409 m ³	1,830.000 m ³
			0.100 mg/l	0.100 mg/l
			0.232 kg	0.182 kg
East & South Landscaped Area	0 %	0 m ³ /s	349.539 m ³	160.000 m ³
			0.233 mg/l	0.233 mg/l
			0.082 kg	0.037 kg
Per pave#1	60 %	0 m ³ /s	330.645 m ³	110.000 m ³
			0.222 mg/l	0.089 mg/l
			0.073 kg	0.010 kg
Perm Pave #2	60 %	0 m ³ /s	151.152 m ³	10.000 m ³
			0.222 mg/l	0.089 mg/l
			0.033 kg	0.001 kg
green roof	-45 %	0 m ³ /s	321.198 m ³	40.000 m ³

			0.200 mg/l	0.290 mg/l
			0.064 kg	0.012 kg
Filter	43.9 %	0.04 m³/s	1,980.000 m³	1,980.000 m³
			0.103 mg/l	0.058 mg/l
			0.204 kg	0.115 kg
Storm Outfall	0 %	0.04 m³/s	1,980.000 m³	1,980.000 m³
			0.058 mg/l	0.058 mg/l
			0.115 kg	0.115 kg
Sophia Street Storm	0 %	0.044 m³/s	2,143.000 m³	2,143.000 m³
			0.071 mg/l	0.071 mg/l
			0.152 kg	0.152 kg

Detailed Report Parameters | Pre Development

Sophia Street Storm

Field	Value
Name	Sophia Street Storm
Catchment	1
Outfall Elevation (m)	232.9

Pre-Development Site

Field	Value
Subcatchment name	Pre-Development Site
Catchment	1
Total AREA (HA)	0.372
Impervious area (HA)	0.197346
Roof area (HA)	0.0888708
Landscaped area (HA)	0
Row Crop area (HA)	0
Open Space / Parkland area (HA)	0.0857832
Forest area (HA)	0
Wetland area (HA)	0

Other area (HA)	0
Manning's n for impervious areas	0.01
Manning's n for pervious areas	0.1
Depression storage for impervious areas (mm)	2
Depression storage for pervious areas (mm)	2.54
Weighted Curve Number	76

Detailed Report Parameters Post Development	
Sophia Street Storm	
Field	Value
Name	Sophia Street Storm
Catchment	1
Outfall Elevation (m)	232.9
Filter	
Field	Value
Name	Filter
Junction Type	sorbitive-media
Catchment	1
Invert Elevation (m)	233
Depth to Surface (m)	1.5
Storm Outfall	
Field	Value
Name	Storm Outfall
Catchment	1
Upstream Node	Filter

Downstream Node	Sophia-Street-Storm
Length (m)	14
Manning's Roughness	0.013
Upstream Invert (m)	233
Downstream Invert (m)	232.9
Pipe Diameter (m)	0.3

Per pave#1

Field	Value
Name	Per pave#1
LID type	perm-pavement
Catchment	1
Outlet (name)	5
% Imperv	100
Width (m)	4
Paved surface (HA)	0.025165000000000007
Roof (HA)	0
Landscaped Area (HA)	0
Row Crop (HA)	0
Open Space/Parkland (HA)	0.009835000000000002
Forest (HA)	0

Wetland (HA)	0
(HA)	0
Berm Height (mm)	0
Surface Slope (%)	2.5
Thickness (mm)	500
Void Ratio	0.4
Impervious Surface Fraction	0.9
Permeability (mm/hr)	10
Clogging Factor	0
Soil	
Porosity (Fraction)	0.5
Field Capacity (Fraction)	0.3
Wilting Point (Fraction)	0.1
Conductivity (mm/hr)	10
Conductivity Slope (Dimensionless)	45
Suction Head (mm)	200
Seepage Rate (mm/hr)	10
Flow Coefficient	1
Flow Exponent	1
Offset Height (mm)	0
Mannings Roughness	

Building, Dog Patch, Loading Bay

Field	Value
Subcatchment name	Building, Dog Patch, Loading Bay
Catchment	1
Total AREA (HA)	0.247
Impervious area (HA)	0.00988
Roof area (HA)	0.22822800000000001
Landscaped area (HA)	0
Row Crop area (HA)	0
Open Space / Parkland area (HA)	0.008892
Forest area (HA)	0
Wetland area (HA)	0
Other area (HA)	0
Manning's n for impervious areas	0.01
Manning's n for pervious areas	0.1
Depression storage for impervious areas (mm)	2
Depression storage for pervious areas (mm)	2.54
Weighted Curve Number	76

East & South Landscaped Area

Field	Value
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Subcatchment name	East & South Landscaped Area
Catchment	1
Total AREA (HA)	0.037
Impervious area (HA)	0.01628
Roof area (HA)	0
Landscaped area (HA)	0
Row Crop area (HA)	0
Open Space / Parkland area (HA)	0.02442
Forest area (HA)	0
Wetland area (HA)	0
Other area (HA)	0
Manning's n for impervious areas	0.01
Manning's n for pervious areas	0.1
Depression storage for impervious areas (mm)	2
Depression storage for pervious areas (mm)	2.54
Weighted Curve Number	76

Perm Pave #2

Field	Value
Name	Perm Pave #2
LID type	perm-pavement

Catchment	1
Outlet (name)	5
% Imperv	100
Width (m)	100
Paved surface (HA)	0.011488
Roof (HA)	0
Landscaped Area (HA)	0
Row Crop (HA)	0
Open Space/Parkland (HA)	0.0045119999999999995
Forest (HA)	0
Wetland (HA)	0
(HA)	0
Berm Height (mm)	0
Surface Slope (%)	1
Thickness (mm)	500
Void Ratio	0.4
Impervious Surface Fraction	0.9
Permeability (mm/hr)	10
Clogging Factor	0
Soil	
Porosity (Fraction)	0.5

Field Capacity (Fraction)	0.3
Wilting Point (Fraction)	0.1
Conductivity (mm/hr)	10
Conductivity Slope (Dimensionless)	45
Suction Head (mm)	200
Seepage Rate (mm/hr)	10
Flow Coefficient	1
Flow Exponent	1
Offset Height (mm)	50
Mannings Roughness	

green roof

Field	Value
Name	green roof
LID type	bioretention
Catchment	1
Outlet (name)	5
% Imperv	100
Width (m)	43
Paved surface (HA)	0
Roof (HA)	0
Landscaped Area (HA)	0

Row Crop (HA)	0
Open Space/Parkland (HA)	0.034
Forest (HA)	0
Wetland (HA)	0
(HA)	0
Berm Height (mm)	150
Surface Slope (%)	0.5
Thickness (mm)	5
Void Ratio	0.4
Impervious Surface Fraction	
Permeability (mm/hr)	
Clogging Factor	0
Soil	
Porosity (Fraction)	0.5
Field Capacity (Fraction)	0.3
Wilting Point (Fraction)	0.1
Conductivity (mm/hr)	10
Conductivity Slope (Dimensionless)	45
Suction Head (mm)	200
Seepage Rate (mm/hr)	10
Flow Coefficient	1

Flow Exponent	1
Offset Height (mm)	0
Mannings Roughness	