

Amey

Sunshine Coast Airport North Precinct

Stormwater Management Plan

Sunshine Coast Airport Pty Ltd

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PREPARED BY	REVIEWED BY	AUTHORISED BY
Name: Jeremy Cox	Name: Simon Steinhofer	Name: Jeremy Cox
Signature: 	Signature: 	Signature: 

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1. Executive Summary

This Stormwater Management Plan (SWMP) has been prepared to support the Development Application for the proposed Sunshine Coast Airport (SCA) Precinct Master Plan, specifically the Northern Precinct.

The objective of this report is to undertake conceptual sizing of the proposed stormwater pipe network and the eastern open drain (adjacent to David Low Way) for the Northern Precinct, and to establish the stormwater quantity parameters that future tenants are to design to at the detailed design stage. Stormwater quality treatment to satisfy the SPP stormwater quality objectives have not been assessed in this report and are to be addressed by each tenancy as part of their individual lot development. The parameters that tenants are required to design to are set out in **Section 5.3**.

Catchment runoff within the site and the contributing David Low Way catchment are quantified within this assessment using the WBNM rainfall-runoff modelling package (**Section 5.2**). It was determined that stormwater detention was not necessary for this development due proximity to the catchment outlet. As detention is not proposed and compliance with the SPP requirements will be taken care of at the individual tenancy level, MUSIC and detention modelling was not undertaken or included in this report.

This report has been developed to address the below planning framework:

- Economic Development Act 2012 (the ED Act)
- Sunshine Coast Airport Priority Development Area Development Scheme (EDQ 2024)
- Sunshine Coast Council Planning Scheme (2014);
- Planning Act 2016 and the associated State Planning Policy (SPP, DILGP, 2017); and
- Environmental Protection Act 1994, Environmental Protection (Water) Policy 2009 (EP water).

The assessment has been undertaken following best practice guidelines recommended within:

- Sunshine Coast Council Technical Specifications;
- Queensland Urban Drainage Manual (IPWEA, 2017); and
- Australian Rainfall and Runoff: A Guide to Flood Estimation (Babister et al, 2019) (ARR19).

This SWMP outlines a concept servicing strategy that accommodates the needs of the Northern Precinct Master Plan.

2. Introduction

Amey Australia Pty Ltd (here within referred to as “Amey”) has been commissioned by RPS AAP Consulting Pty Ltd on behalf of Sunshine Coast Airport to prepare a Stormwater Management Plan in support of a development application for the Sunshine Coast Airport Northern Precinct. The Northern Precinct is located within the north-eastern portion of the airport site.

The scope of the project can be summarised as an investigation of the pre and post-development stormwater discharge to determine stormwater parameters onsite. This report outlines the concept stormwater servicing strategy to support the development and the stormwater management strategy proposed to meet runoff quantity and quality objectives for the future tenants of the northern precinct Master Plan area.

The subject site is located on Lot 699 on SP261024 which is part of the airport wider precinct. The subject site's characteristics can be seen in **Section 4**.

3. Data

In the preparation of this report, information about the site was gathered from the following sources:

- Aerial LiDAR data by Department of Natural Resources and Mines (DNRM);
- Proposed development site plans prepared by Amey;
- Design inputs for hydrologic and hydraulic modelling from the Australian Rainfall and Runoff Data Hub;
- Rainfall and Meteorological data by the Australian Bureau of Meteorology; and
- Aerial Imagery and map data from Queensland Globe, Google (Accessed June 2026).

4. Site Characteristics

4.1. Site Area and Land Use

The Sunshine Coast Airport is located at Maroocha on Queensland's Sunshine Coast, approximately 10kms north of Maroochy and approximately 90kms north of Brisbane. The airport is situated on low-flying coastal land adjacent to the Coral Sea and is accessed primarily via Friendship Avenue and the Davis Low Way transport corridor. The facility accommodates domestic and international passenger services, general aviation activities, aviation related businesses and associated transport infrastructure. The Northern Precinct is located within the north-eastern portion of the airport site. The precinct is bounded by established residential properties to the east, while grassed operational areas associated with the airport are situated to the west. The Coral Sea forms a prominent feature along the north-eastern extent of the precinct.

Refer to Figure 1 – Aerial Imagery of the site. Northern Precinct highlighted (Source: QLD Globe) below for an aerial image of the site and its locality. The Airport's Northern Precinct is highlighted.



Figure 1 – Aerial Imagery of the site. Northern Precinct highlighted (Source: QLD Globe)

4.2. Existing Drainage and Topography

The site is relatively flat, with ground levels generally ranging from approximately 8.8 m AHD along the western boundary to 9.3 m AHD toward the northern edge. The site drains generally from north to south and east to west, with a typical cross-fall of approximately 1%.

An existing open drain traverses the site in an east–west direction, collecting stormwater runoff from the site and from a number of pipe outlets that discharge into the drain. These outlets originate from both on-site catchments and the surrounding road network, including flows from David Low Way to the east. Under the existing condition, the drain conveys these combined flows to a discharge point at the western extent of the precinct.

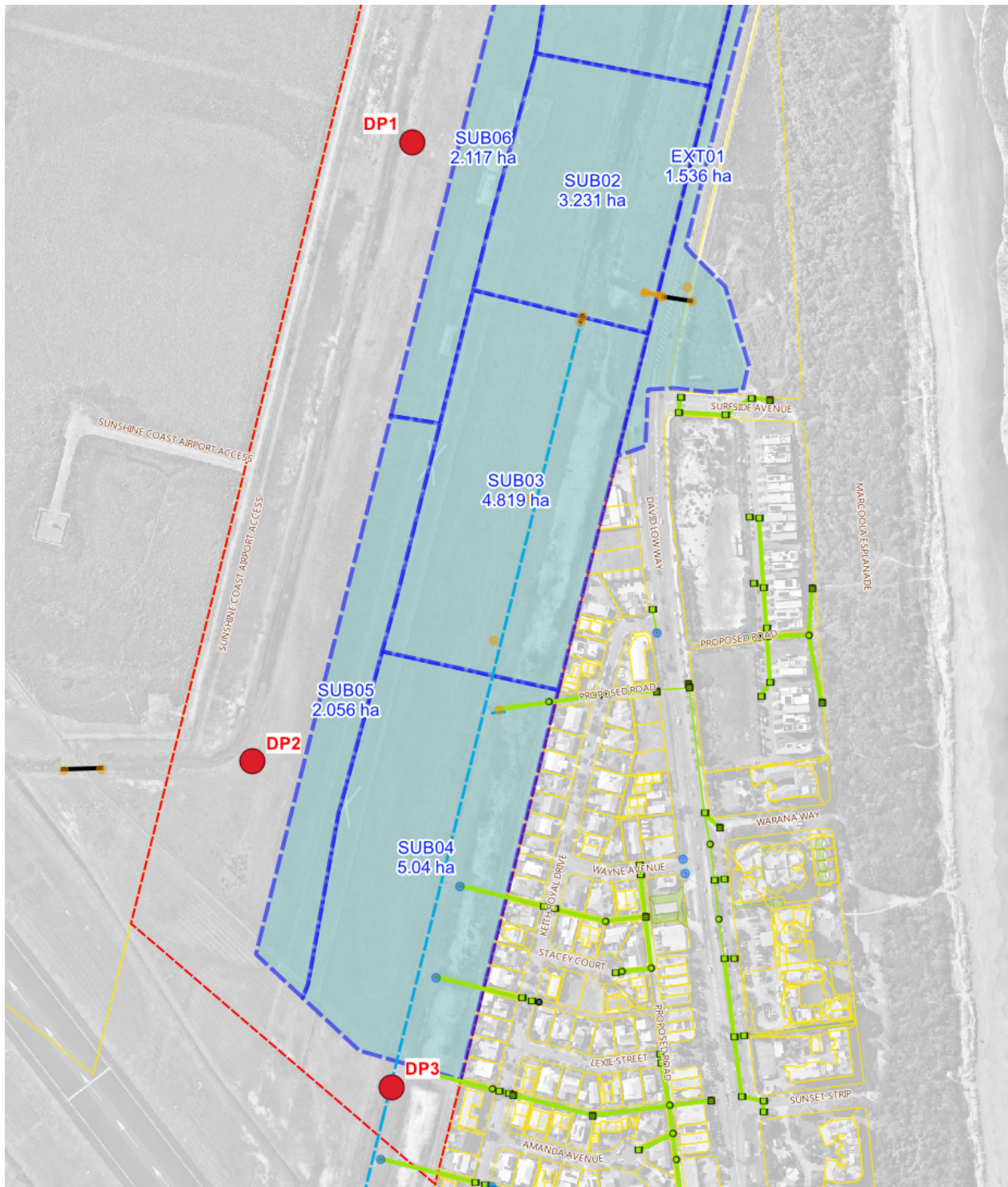


Figure 2 – Pipe Outlets to Drain within the Site

4.3. Proposed Development

The proposed development comprises an industrial and commercial precinct within the Sunshine Coast Airport Northern Precinct. Development will involve significant earthworks, pavement construction, building footprints, and associated stormwater infrastructure to service the proposed lots. Each future tenancy is expected to manage its own lot-scale stormwater quantity and quality requirements at the detailed design stage, in accordance with the relevant planning framework and council requirements.

4.4. Proposed Drainage

The proposed drainage strategy for the Northern Precinct has been developed to convey post-development stormwater flows to the identified lawful discharge points, while limiting increases in peak discharge to pre-development conditions. The stormwater drainage strategy for the site follows the outcomes and approach of the BMT “Memorandum – Airport North Precinct Optimisation” dated 22 January 2026.

The existing open drain traversing the site will be removed as part of the development. A new, enlarged open drain is proposed along the western portion of the precinct to convey catchment flows southward to the existing downstream drainage network. The sizing of this western drain is undertaken by BMT who are engaged on the broader Sunshine Coast Airport hydraulic works.

A network of underground pipes is proposed to intercept flows currently discharging from existing pipe outlets into the existing eastern perimeter drain. These flows are proposed to be captured in the new eastern perimeter drain and conveyed to drain convergence point at DP3. The proposed eastern perimeter drain is intended to collect overland flows from the David Low Way Road corridor and eastern site catchments, discharging via DP3.

A small portion of the David Low Way and northern site entry flows will be conveyed to DP4 which drains into the proposed western drain.

The concept drainage layout, including the pipe network and open drain alignment, is shown in **Appendix A**. Pipe sizes have been determined on a conceptual basis. Detailed design of individual tenancy drainage systems will be undertaken at the detailed design stage.

5. Stormwater Quantity Management

5.1. Lawful Point of Discharge

In accordance with Queensland Urban Drainage Manual (QUDM 2017) section 3.9, lawful discharge of stormwater is discharged from the site lawfully and at a lawful location in addition to needing to meet other statutory requirements such as the SPP and Planning Act.

The test in Section 3.9.1 of QUDM is in sequential order. If a condition can be met, then subsequent items need not be tested. This should be read in full but is summarised here to provide context for this site. It can be summarised as:

- Test 1: Will the proposed development alter the site’s stormwater discharge characteristics in a manner that may substantially damage a third-party property? (if yes go to Test 2, if not then LPD is satisfied)
- Test 2: Is the location of the discharge from the development site under the lawful control of the local government or other statutory authority from whom permission to discharge has been received?
- Test 3: An authority to discharge over affected properties will be necessary.

The site’s lawful point of discharge has been identified as the existing drainage infrastructure to the south the precinct, which forms part of the Council-controlled stormwater network. The proposed development will discharge at Discharge Points DP1, DP2, DP3 and DP4 as shown on the catchment delineation plans included in with DP3 considered close to the site lawful point of discharge. In accordance with QUDM Section 3.9.1 Test 1, the proposed drainage is required to be designed to ensure that post-development peak discharges do not substantially increase flows at the lawful point of discharge to ensure no adverse impacts or over burdening of the local government infrastructure. Consequently, it will be required for future tenants to mitigate peak stormwater flow to undeveloped (0% impervious) levels. Peak flows from the site for pre and post development conditions are shown in **Section 5.2.7**.

5.2. Hydrologic Assessment

As per QUDM, a minor storm design AEP was taken as 10% for a commercial/residential development, and a 1% AEP was assessed for a major design storm. A site only hydrologic model was undertaken using the rainfall-runoff routing software, Watershed Bounded Network Model (WBNM 2019), to determine the peak discharge and hydrographs from the site. The modelling has been completed in accordance with the procedures and methodology prescribed by Australian Rainfall and Runoff 2019 (ARR19).

The software reference manual describes WBNM in the following way 'WBNM was originally developed to be a physically realistic representation of the catchment as it transforms storm rainfall into a flood hydrograph. It has built in lag relations, based on catchment geomorphology. The actual lag times in these relations were derived using recorded rainfall and flood hydrograph data' (University of Wollongong, 2007).

5.2.1. Sub-Catchment Characteristics

The hydrologic model was structured to reflect the post-development catchment delineation as shown in **Appendix A**. The fraction impervious for the pre-development scenario internal to the site was derived from aerial area measurements. The fraction impervious values were increased in the post-development scenario to represent the proposed pavement. A summary of model input parameters is provided below in Table 1.

CATCHMENT	PRE-DEVELOPMENT		POST DEVELOPMENT	
	AREA (ha)	FRACTION IMPERVIOUS	AREA (HA)	FRACTION IMPERVIOUS
EXT01	1.535	1.535	40	40
EXT02	0.312	0.312	40	40
EXT03	8.217	8.217	60	60
EXT04	3.167	3.167	60	60
SUB01	4.775	1.203	0	80
SUB02	3.228	2.000	0	80
SUB03	4.816	5.122	0	80
SUB04	5.036	1.755	0	80
SUB05	2.054	3.222	0	80
SUB06	2.115	2.464	0	80
SUB07		1.537		80
SUB08		4.722		80

Table 1 – Summary of Sub-Catchments Characteristics

5.2.2. Meteorological Data

Intensity-Frequency-Duration (IFD) data for the site has been derived in accordance with ARR19 and via Bureau of Meteorology's (BOM) Rainfall IFD Data System. The rainfall depths and intensities generated for the site have been derived from the co-ordinates: [-26.596449 and 153.094396]. The net rainfall depths (IFD data) have been used in conjunction with the dimensionless East Coast North (ECnorth) ensemble storm temporal patterns, as prescribed by ARR19 (Babister et al 2019), in the WBNM hydrologic analysis.

5.2.3. Hydrological Routing

Hydrologic modelling has been undertaken using the Nonlinear Routing Method which is the default for natural catchments in WBNM. For natural catchments and streams, the Stream Lag Factor is set at 1.0 with a non-linearity exponent of 0.77.

5.2.4. Model Parameters

To utilise the 2016 IFDs in the hydrologic model, the model parameters (initial and continuing losses, preburst median depths, and ratios) were extrapolated from the ARR Data Hub. Additional catchment and routing characteristics were entered into the model to reflect the characteristics of the existing catchment. A lag parameter of 1.2 was used in the model in accordance with the WBNM User Guide and the technical paper “WBNM runoff routing parameters for south and eastern Australia” (Boyd, Bodhinayake). Initial and continuing losses stated on the ARR data hub for the site were stated as 35.0mm and 2.3mm respectively. Pre-burst rainfall was included in the hydrologic model using the median pre-burst depths ranging from 0mm to 38.8mm. The Data Hub file containing the catchment data is included in Error! Reference source not found..

5.2.5. Design Storm Event Temporal Pattern Selection

ARR19 requires simulation of a large volume of storms to determine the critical duration and the temporal patterns that led to the critical cases. ARR19 provides guidance to run the hydrological modelling process for the whole catchment of interest in order to determine the critical duration and the temporal pattern and selecting the duration in which the mean temporal pattern provides the highest peak discharge.

Based on the WBNM hydrologic model, the temporal patterns that produced mean design flow estimates at the discharge locations are summarised in Table 2.

ANNUAL EXCEEDANCE PROBABILITY	CRITICAL DURATION (min)	TEMPORAL PATTERN	INITIAL LOSS (mm)*	CONTINUING LOSS (mm/hr)
63.2%	180	2	35	2.3
50%	180	10	35	2.3
20%	90	2	35	2.3
10%	45	6	35	2.3
5%	45	7	35	2.3
2%	45	2	35	2.3
1%	45	2	35	2.3

Table 2: Ensemble Temporal Pattern Selection for Hydraulic Model Inflows

*Initial loss before being applied to pre burst.

5.2.6. Rational Method Comparison

The peak discharges for the development site provided by the hydrologic model have been compared against those obtained from the Rational Method calculations as a comparison that the model is providing reasonable results.

The results of this comparison are provided in Table 3 and demonstrates the hydrologic model is providing results within an acceptable range of the Rational Method calculations and is therefore considered appropriate for use in this analysis.

ANNUAL EXCEEDANCE PROBABILITY	RATIONAL (M ³ /S)	PRE-DEVELOPMENT WBNM (M ³ /S)	DIFFERENCE (M ³ /S)	CHANGE %
63.2%	3.159	4.042	0.883	28
50%	3.785	4.704	0.919	24.3
20%	5.732	6.135	0.403	7
10%	7.105	7.803	0.698	9.8
5%	8.54	9.464	0.924	10.8
2%	10.958	11.102	0.144	1.3
1%	12.403	12.707	0.304	2.5

Table 3: Peak Discharge Comparison – Rational vs WBNM

5.2.7. Hydrologic Model Results

To understand the impact of the development, peak discharges for pre- and post-development have been assessed for the LPD. Peak discharges from the hydrologic model for the pre- and post-developed site are shown in **Table 4** below.

ANNUAL EXCEEDANCE PROBABILITY	PRE-DEVELOPMENT PEAK DISCHARGE (M ³ /S)	POST DEVELOPMENT PEAK DISCHARGE (M ³ /S)	DIFFERENCE	CHANGE %
63.2%	4.042	5.075	1.033	25.06
50%	4.704	4.953	0.249	5.3
20%	6.135	9.889	3.754	61.2
10%	7.803	10.461	2.658	34.1
5%	9.464	11.733	2.269	24
2%	11.102	17.117	6.015	54.2
1%	12.707	19.325	6.618	52.1

Table 4: Peak Stormwater Discharges Summary – Pre vs. Post Development

It can be seen in Table 4 that post-development peak discharges at the overall site LPD increase by approximately 15%–50% across the minor and major design storms relative to pre-development conditions, due to the increase in impervious area across the precinct.

Detention is not proposed as part of this development due to the proximity of the site to the Maroochy River catchment outlet and the capacity of the downstream drainage infrastructure. The open channel downstream of the site conveys flows from a broader catchment (relative to the site) and has more than enough capacity to convey site flows. The downstream channel conservatively has a conveyance capacity of 37.5m³/s which is more than enough to convey the additional site flows. The floodplain and conveyance/storage interaction is addressed in the broader Sunshine Coast Airport modelling undertaken by BMT.

The discharge-point breakdown in **Table 5** to **Table 8** shows the flows under pre and post development conditions for each discharge point. It is expected that flows will increase in the western drain more than other locations. The most significant increase is observed at DP1, which collects flows from SUB01, SUB02, SUB03, SUB06 and SUB07 under post development conditions and discharges into the proposed, upgraded western drain. By contrast, DP3 (just upstream of the convergence point for site flows) shows a reduction in peak discharge relative to pre-development conditions, attributable to a reduction in catchment area.

ANNUAL EXCEEDANCE PROBABILITY	PRE-DEVELOPMENT PEAK DISCHARGE (M ³ /S)	POST DEVELOPMENT PEAK DISCHARGE (M ³ /S)	DIFFERENCE	CHANGE %
63.2%	0.26	1.883	1.623	624.2
50%	0.287	1.742	1.455	507
20%	0.545	3.84	3.295	604.6
10%	0.587	3.825	3.238	551.6
5%	0.687	4.444	3.757	546.9
2%	0.913	6.815	5.902	646.4
1%	1.059	7.639	6.58	621.3

Table 5: Peak Stormwater Discharges Summary – Pre vs. Post Development – DP1

ANNUAL EXCEEDANCE PROBABILITY	PRE-DEVELOPMENT PEAK DISCHARGE (M ³ /S)	POST DEVELOPMENT PEAK DISCHARGE (M ³ /S)	DIFFERENCE	CHANGE %
63.2%	0.254	0.75	0.496	195.3
50%	0.279	0.669	0.39	139.8
20%	0.532	1.593	1.061	199.4
10%	0.572	1.61	1.038	181.5
5%	0.669	1.813	1.144	171
2%	0.893	2.881	1.988	222.6
1%	1.036	3.218	2.182	210.6

Table 6: Peak Stormwater Discharges Summary – Pre vs. Post Development – DP2

ANNUAL EXCEEDANCE PROBABILITY	PRE-DEVELOPMENT PEAK DISCHARGE (M ³ /S)	POST DEVELOPMENT PEAK DISCHARGE (M ³ /S)	DIFFERENCE	CHANGE %
63.2%	3.496	2.411	-1.085	-31
50%	4.095	2.498	-1.597	-39
20%	5.349	4.346	-1.003	-18.8
10%	6.748	5.037	-1.711	-25.4
5%	8.194	5.469	-2.725	-33.3
2%	9.51	7.313	-2.197	-23.1
1%	10.888	8.341	-2.547	-23.4

Table 7: Peak Stormwater Discharges Summary – Pre vs. Post Development – DP3

ANNUAL EXCEEDANCE PROBABILITY	PRE-DEVELOPMENT PEAK DISCHARGE (M ³ /S)	POST DEVELOPMENT PEAK DISCHARGE (M ³ /S)	DIFFERENCE	CHANGE %
63.2%	0.049	0.049	0	0
50%	0.043	0.043	0	0
20%	0.111	0.111	0	0
10%	0.101	0.101	0	0
5%	0.126	0.126	0	0
2%	0.206	0.206	0	0
1%	0.231	0.231	0	0

Table 8: Peak Stormwater Discharges Summary – Pre vs. Post Development – DP4

5.2.8. Open Drain Design

The proposed open drain which discharges at DP3 has been sized to convey the combined flows from sub-catchments SUB04, SUB05, EXT01, EXT03 and EXT04 for the 1% AEP event. Existing pipe outlets that previously discharged into the open drain are to be intercepted and collected within a pit and pipe system, due to the depth of the existing outlet inverts relative to the new drain formation.

The open drain characteristics are summarised in **Table 9** below. The drain alignment is shown on the concept layout in **Appendix A**. Peak flows were taken from WBNM results at DP3.

CHARACTERISTIC	VALUE
Top Width (m)	14
Base Width (m)	4
Freeboard (m)	0.3
Capacity (m ³ /s)	8.341
Batters 1:	2
Flow Depth (m)	2.199
Total Depth (m)	2.5
AEP Event Conveyed	1%

Table 9: Open Drain Characteristics



Figure 3: Proposed Open Drain

5.2.9. Conceptual Pipe Layout and Sizing

Pipes within the road network have been sized conceptually to convey the design flows calculated from each sub-catchment. The concept pipe layout is shown on the Post-Development Catchment Delineation plan (Error! Reference source not found.). Pipe sizes are indicative only and have been determined for cost estimation purposes; they will be refined at the detailed design stage in accordance with QUDM requirements. It is anticipated that drainage for each future tenancy will be designed independently based on the specific end use and building footprint.

5.3. Future Tenancy Design Parameters

This SWMP establishes the precinct-wide conceptual drainage infrastructure only. Detailed stormwater conveyance sizing and stormwater quality treatment to satisfy the SPP stormwater quality objectives have not been assessed as part of this report and are to be addressed by each individual tenancy at the detailed design stage. To support consistent and coordinated design across the precinct, future tenancies are to design to the following parameters:

Lot discharge point: Each tenancy is to direct lot stormwater runoff to the conceptual pipe network and discharge point allocated to its sub-catchment, as shown on the concept drainage layout in **Appendix A:.**

The relevant sub-catchment and discharge point applicable to each lot can be confirmed against the catchment delineation plan in **Appendix B:Error! Reference source not found..**

Design storm events: Lot-scale drainage infrastructure is to be designed for a minor (10% AEP) storm event in accordance with QUDM, with overland flow paths and major drainage infrastructure checked for the 1% AEP major storm event, consistent with the methodology adopted in this report (refer **Section 5.2**).

Stormwater quantity management: The conceptual pipe network and open drain have been sized in line with the peak discharges presented in **Table 4**. Tenancies should still confirm sizing and discharge locations specific to their requirements.

Stormwater quality management: Each tenancy is responsible for designing and implementing WSUD measures to meet the SPP stormwater quality outcomes applicable to its land use, in accordance with **Section 7**. Stormwater quality treatment train design has not been undertaken as part of this report.

Pipe and open drain capacity: Prior to detailed design, tenancies connecting to the conceptual pipe network or the proposed open drains are to confirm available capacity with the Northern Precinct civil designer. Discharges are not to exceed the design flows on which the conceptual sizing in this report and in

CHARACTERISTIC	VALUE
Top Width (m)	14
Base Width (m)	4
Freeboard (m)	0.3
Capacity (m ³ /s)	8.341
Batters 1:	2
Flow Depth (m)	2.199
Total Depth (m)	2.5
AEP Event Conveyed	1%

Table 9 is based, unless supported by further hydraulic assessment.

6. Flooding

The Northern Precinct is required to address the flooding requirements of the PDA Development Scheme 2024 as per PDA Wide Criteria on **Figure 4: SCC Flood Overlay** and described in Section 2.5.9 Flood management of the Development Scheme. Additionally, the site located within an area subject to flooding under the Sunshine Coast Council Planning Scheme flood overlay.

A detailed hydraulic and flood impact assessment for the precinct is being undertaken by BMT as part of the broader development investigations. The flood mitigation strategy is intended to consist of maintaining flood conveyance and flood storage through upgrading the Eastern Perimeter Drain (EPD), Western Perimeter Drain (WPD) and extending the Marcoola Bund. The BMT assessment will address overland flow flooding, flood levels, and flood immunity requirements for the proposed development in accordance with the PDA Development Scheme and Sunshine Coast Council requirements.

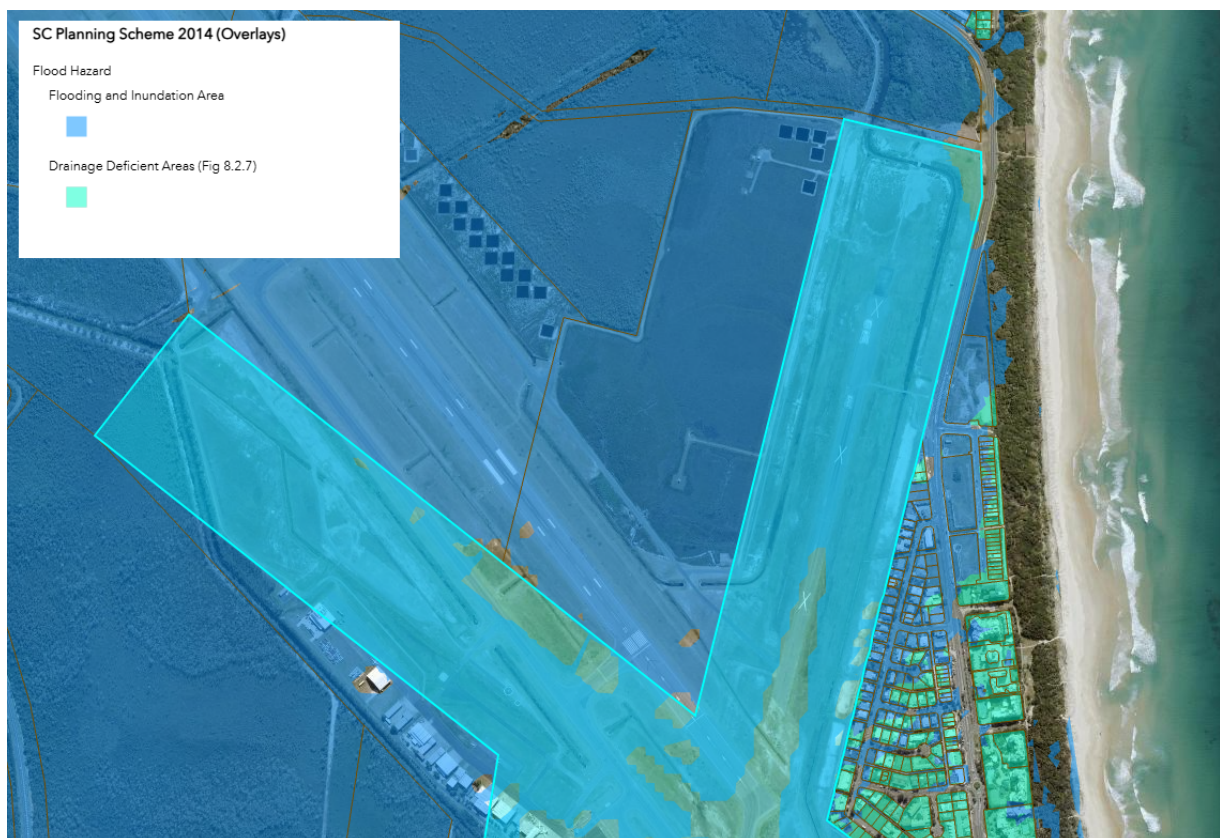


Figure 4: SCC Flood Overlay

This SWMP is focused on the post-development drainage strategy and hydrological assessment for the precinct. Outcomes of the flood impacts assessments and information on flood management for the development should be obtained from BMT reporting.

7. Stormwater Quality Management

The proposed development exceeds the 2,500 m² threshold under the Queensland Government's State Planning Policy (SPP) (Queensland Government 2017) and is therefore subject to the stormwater quality outcomes prescribed in SPP Appendix 2. Operational stormwater quality management for individual tenancies will be addressed at the detailed design stage, with each tenancy responsible for designing and implementing appropriate Water Sensitive Urban Design (WSUD) measures to meet the applicable SPP water quality targets, consistent with the requirements set out in **Section 5.3**. Stormwater quality treatment train design has not been undertaken as part of this report.

As the site is located within the South East Queensland climatic region, the applicable SPP design objectives for stormwater quality, being the required reductions in mean annual pollutant load from the unmitigated (pre-development) condition, together with the applicable waterway stability management objective, are reproduced

in **Table 10** below, sourced from Table B of Schedule 2 (Stormwater Management) of the SPP. These targets are to be adopted by each tenancy in the design of their lot-scale WSUD treatment measures.

POLLUTANT LOAD REDUCTION				WATERWAY STABILITY MANAGEMENT
TOTAL SUSPENDED SOLIDS (TSS)	TOTAL PHOSPHORUS (TP)	TOTAL NITROGEN (TN)	GROSS POLLUTANTS >5MM	
80%	60%	45%	90%	Limit the peak 1-year ARI event discharge within the receiving waterway to the pre-development peak 1-year ARI discharge

Table 10: SPP Stormwater Quality Design Objectives – South East Queensland

Design objectives are expressed as a percentage reduction in mean annual pollutant load relative to the unmitigated (pre-development) condition. These targets are consistent with those applied to developments across South East Queensland and are not specific to this precinct.

7.1. Construction Phase

Various pollutants are generated during construction which can enter stormwater runoff. These pollutants can negatively affect the quality of the stormwater runoff and contaminate the downstream receiving environment if not managed appropriately. **Table 11: Typical Construction Phase Pollutants** below outlines the major sources of pollutants.

CONSTRUCTION PHASE POLLUTANTS
Litter from construction packaging, paper, food packaging, off cuts, etc.
Sediment from erosion of exposed soils and stockpiles.
Hydrocarbons – from fuel and oil spills, leaks from construction equipment.
Toxic Materials – cement slurry, solvents, cleaning agents, wash waters.
pH altering substances – cement slurry, wash waters.

Table 11: Typical Construction Phase Pollutants

7.2. Erosion and Sediment Control

Erosion and sediment control measures used during the construction phase of the development will be designed and installed in accordance with International Erosion Control Association (Australasia) - “Best Practice Erosion & Sediment Control – for building and construction sites” November 2008 and KASC requirements for Erosion and Sediment Control.

7.2.1. General Erosion and Sediment Control Notes

The principal contractor should ensure the following erosion and sediment control measures are followed at a minimum during construction:

- The Erosion and Sediment Control Plan should be supplemented by Progressive Erosion and Sediment Control Plans (PESCP). PESCPs are to be developed to identify the specific location and, where required, additional erosion and sediment controls applicable to individual work stages. PESCPs shall be documented via mark ups to approved plans. Where a change in the level of sediment control standard is proposed in a PESCP, the PESCP shall be reviewed and approved by an appropriately qualified person prior to the change being implemented;
- Minimise the extent and duration of disturbance, maintaining existing ground cover to the greatest extent possible;

- Commissioning / decommissioning of plant and refuelling to be undertaken a minimum of 30m away from any watercourse/drainage line;
- Site inductions should include information of the erosion and sediment control measures, and a reporting system through which site personnel can report perceived erosion and sediment control issues;
- All ERSED controls to be inspected regularly (weekly, pre/post rainfall event i.e. forecast or actual rainfall of >10mm) with maintenance/repairs to be undertaken when necessary;
- Revegetation of disturbed/bare areas to be progressively implemented;
- Where clean water drains and sediment traps/sumps are necessary, all clean water drains and sediment traps and associated drainage must be installed and commissioned prior to the commencement of any grubbing works within the catchment area;
- All controls must be installed within approved project footprint;
- Ensure all site access is stabilised with rumble grid and clean rock; and
- Where stockpiling of spoil is required, stockpiles should be established away from stormwater inlets and surrounded with appropriate erosion and sediment control measures.

7.2.2. Sediment Control Measures

These measures focus on sediment control and are to be applied to individual catchments based on the RUSLE soil loss calculations. These measures include:

- Rock checks/Filter dams: Where topography allows, rock checks and filter dams are used to slow velocities of dirty water (type 2 control).
- Sediment fence: Sediment fences provide sediment control in locations that are likely to receive predominately sheet flows. Used in conjunction with concentrated flow sediment treatment techniques (type 3 control).
- Site Exit/Entry: To prevent sediment tracking onto public roads, a stabilised rock pad is to be constructed at the identified entry/exit location to the site. Adjacent roads should be inspected regularly, and any sediment deposited on public roads should be removed in a safe manner and disposed of to an approved disposal facility.

7.2.3. Stockpile Management

Proper management of stockpiles is crucial for effective erosion control. Stripped soil must be placed only in approved stockpile locations, while topsoil must be stacked at a maximum height of 2 meters. Additionally, excess subsoil or spoil should be stockpiled separately from topsoil and in designated areas located uphill of sediment traps.

To prevent sediment runoff, it is necessary to install non-woven sediment fence (bidim A34 or equivalent) around the stockpiles. If topsoil or subsoil/spoil stockpiles are undisturbed for an extended period exceeding the nominated erosion standard, additional measures are required. For topsoil stockpiles, seeding of a cover crop at a rate of 10kg/ha must be applied, following the revegetation specifications for seed mix. For subsoil/spoil stockpiles, temporary cover or soil binder must be applied.

MONTH	TEMPORARY STABILISATION EROSION STANDARD
Jan – March	5 days
Apr- May, Dec	10 days
June, Nov	20 days
Jul – Oct	30 days

Table 12: Temporary Stabilisation Erosion Standard

7.2.4. Contaminated Land and ASS

Acid Sulfate soils (ASS) and per- and poly-fluoroalkyl substances (PFAS) have been identified as present on site. These require monitoring and management in relation to stormwater runoff during construction activities.

Section 9.4.4 of the Acid Sulfate Soil Management Plan prepared by RPS sets out the requirements for the discharge surface water from the site applicable to the construction phase, in relation to Acid Sulfate Soils. These measures include:

- Monitoring water quality prior to discharge for pH, dissolved oxygen (DO), ferrous iron, and aluminium.
- Monthly monitoring
- Treatment prior to discharge
- Available hydrated lime onsite for treatment of acidic waters
- Cessation of discharge if non-conformance of stated water quality metrics is identified.

Please refer to Sunshine Coast Airport – Airport North, Precinct Master Plan, Acid Sulfate Soil Management Plan for more detailed information on Acid Sulfate Soils (ASS).

The site area encompasses a location of a prior plane crash where PFAS was contained in the Aqueous Film Forming Foam (AFFF) used for firefighting and rescue. There is consequently contaminated land within the proposed area of works. Additionally, the PDA Development Scheme under Section 2.5.8 Community Safety and Development Constraints requires compliance with the site wide PFAS Management Plan v1.0 14th June 2024. All works in relation to stockpile and management of run off must be in accordance with Section 14 and Section 15 of the PFAS Management Plan v1.0 14th June 2024. Some of these requirements include:

- Excavate during dry periods and to reduce excavation depth wherever possible.
- Stormwater should be diverted around site excavations and stockpiles
- Stormwater runoff monitoring to ensure runoff meets the concentration requirements
- Undertake treatment if necessary including the use of a water treatment plant if needed.

The PFAS Management Plan v1.0 14th June 2024 and Environmental Constraints Assessment Report should be adhered to in relation to discharge of runoff from the site during construction activities.

7.3. Site Monitoring and Maintenance

Erosion and sediment control (including drainage) measures are to be maintained in proper working order at all times during their operational life. Inspections are to be conducted:

- Weekly;
- Daily when rainfall is occurring;
- Prior to and following rainfall events of sufficient intensity and duration to cause runoff; and
- Immediately prior to and following periods of shutdown.

Inspections shall include checks of all the drainage, erosion and sediment control measures (including site discharge points) for:

- Evidence of excessive sediment transport or deposition on or off site;
- Evidence of excessive erosion either on site or immediately downstream;
- Treatment and de-watering requirements for sediment basins and traps;
- Progress and stability of site rehabilitation and revegetation works.

Where inspections identify a non-conforming control measure or issues likely to prevent compliance with erosion and sediment control objectives, corrective or preventative actions will be developed and implemented as necessary to achieve the required erosion and sediment control performance standards. A written record of monitoring observations and maintenance tasks shall be kept on site and available for inspection.

8. Conclusion

This report has undertaken conceptual sizing of the proposed stormwater pipe network and the eastern open drain serving the Sunshine Coast Airport Northern Precinct, based on the hydrologic assessment presented herein, in accordance with the relevant manuals and guidelines including QUDM and ARR19.

Further to this, the report demonstrates that the proposed development is adequate to satisfy the 'lawful point of discharge' test as per QUDM, with proposed stormwater from the site captured and conveyed to the identified lawful discharge points.

Detailed stormwater conveyance design and stormwater quality treatment to satisfy the SPP stormwater quality objectives have not been assessed as part of this report and are to be addressed by each future tenancy at the detailed design stage, in accordance with the parameters set out in **Section 5.3** in addition to the Stormwater Quality Objectives set out in **Table 10**. The outcomes of the separate flood impact and hydraulic assessment for the precinct, including the sizing of the larger western open drain, should be obtained from BMT reporting (refer **Section 6**).

This Stormwater Management Plan is considered consistent with the Development Code from the Queensland Urban Drainage Manual 2017.

9. Qualifications

Our analysis and overall approach have been specifically catered for the requirements of [Client name] and may not be applicable beyond this scope. For this reason, any other third parties are not authorised to utilise this report without further input and advice from Amey.

Amey has relied on the following information as outlined in **Section 3** of this Report.

While Amey's report accurately assesses peak flows from design storms in accordance with current industry standards and guidelines, the sites future observed flows may vary from that predicted. For these reasons appropriate freeboards should be adopted.

10. RPEQ Certification

As Registered Professional Engineer of Queensland (RPEQ) for this project, on behalf of Amey Australia Pty Ltd, I certify that the modelling undertaken as part of this assessment has been undertaken in accordance with current engineering best practice as recommended in the QUDM and ARR19.

Name: Jeremy Cox

RPEQ No: 14732

Date: 31 August 2026

Signature: _____

11. References

1. Institute of Public Works Engineering Australasia (QLD Division), et al, 2016. *Queensland Urban Drainage Manual (QUDM), Fourth Edition*. Brisbane.
2. Ball J, Babister M, Nathan R, Weeks W, Weinmann E, Retallick M, Testoni I, (Editors) *Australian Rainfall and Runoff: A Guide to Flood Estimation*, © Commonwealth of Australia (Geoscience Australia), Version 4.2, 2019.
3. Bureau of Meteorology, *2016 IFDs – Rainfall Data*. Available at: <http://www.bom.gov.au/water/designRainfalls/revised-efd/?year=2016>

Appendix A: Layout Plans

Airport North Precinct Master Plan

SUB-PRECINCT AND LAND USES

Sub-Precincts	PMP Land Use	Site	Approx. Site Area
P5: Airport North			
North - Tourism & Accommodation		A	9.273ha
	Resort Complex		
	Short Term Accommodation (STA)		
	Multiple Dwelling		
	Retirement Facility		
	Shop		
	Bar		
	Food & Drink Outlet		
	Hotel		
	Function Facility		
Central - Mixed Use		B	2.561ha
	Bar		
	Food & Drink Outlet		
	Shop		
	Showroom		
	Market		
	Office		
	Veterinary Services		
	Health Care Services		
	Indoor Sports & Recreation		
South - Employment		C	8.273ha
	Low Impact Industry		
	Research & Technology		
	Service Industry		
	Warehouse		
	Office		
	Air Services		
	Aviation Facilities		
	Tourist Activity		
	Indoor Sports & Recreation		
Drainage Corridors		D	13.717ha
	Drainage Corridors		
Total			33.824ha

Land uses listed for each sub-precinct express a development intent only and do not exclude other alternative uses permitted in the Development Scheme.

LEGEND

- SCA Property Boundary
- Precinct Boundary
- Potential Sub-Precinct Boundary (5A/5B)
- Northern Sub-precinct (Tourism & Accom)
- Central Sub-precinct (Mixed Use)
- Southern Sub-precinct (Employment)
- Drainage & Buffer Sub-precinct
- Resort Complex Node
- Retail Activation Node
- Potential Civic Park Node
- Indicative Roads
- Sightline to Mt Coolum*
- 4 Way Intersection

Note:
The PMP is supported by the following plans;

- Street Network Plan
- Active Movement Plan
- Interface Plan
- Privately Owned Green Space Plan



PRECINCT MASTER PLAN

SC: 1 : 5000

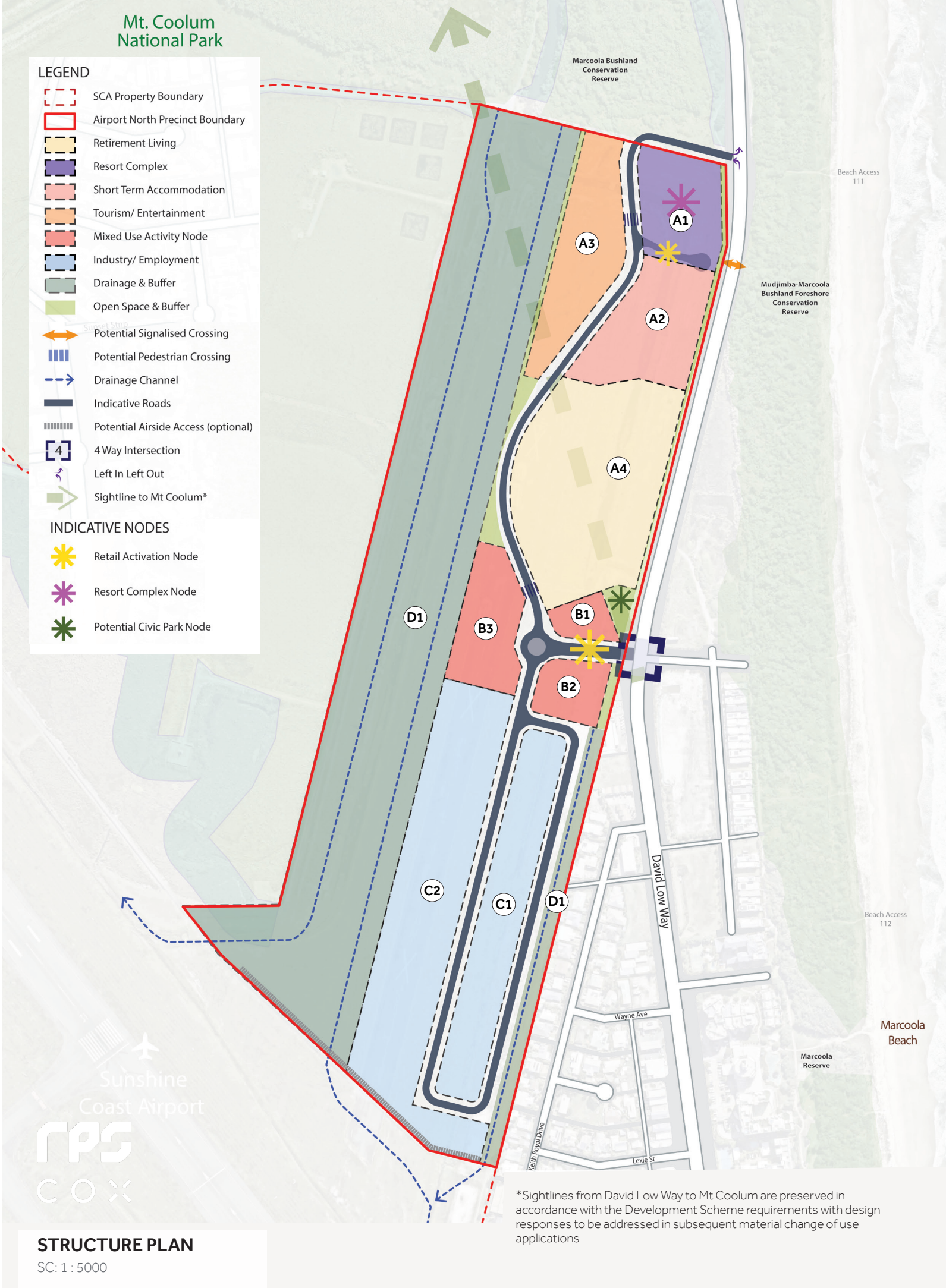
*Sightlines from David Low Way to Mt Coolum are preserved in accordance with the Development Scheme requirements with design responses to be addressed in subsequent material change of use applications.

Detailed Master Plan

LAND USES

Sub-Precinct	Land Use	Site
P5: Airport North		
North - Tourism & Accommodation	Resort Complex Function Facility (ie. Conference) Hotel, Bar, Food & Drink Outlet, Shop	A1
North - Tourism & Accommodation	Short Term Accommodation Bar, Food & Drink Outlet, Shop	A2
North - Tourism & Accommodation	Bar, Food & Drink Outlet, Function Facility, Hotel	A3
North - Tourism & Accommodation	Multiple Dwelling or Retirement Facility	A4
Central -Mixed Use	Bar, Food & Drink Outlet Shop, Market Office Civic Plaza	B1
Central -Mixed Use	Bar, Food & Drink Outlet Shop, Market, Showroom Health Care Services, Office, Veterinary Services Indoor Sport & Recreation	B2
Central -Mixed Use	Children's Playcentre, Gym or Indoor Sport & Recreation Bar, Food & Drink Outlet Health Care Services, Office, Veterinary Services Shop, Market, Showroom	B3
South - Employment	Low Impact Industry, Research & Technology, Service Industry, Warehouse, Air Services, Aviation Facilities, Indoor Sport & Recreation, Office, Tourist Activities	C1
South - Employment	Low Impact Industry, Research & Technology, Service Industry, Warehouse, Air Services, Aviation Facilities, Indoor Sport & Recreation, Office, Tourist Activities	C2
Drainage Corridors	Drainage Corridors	D1

Potential land use set out in this table are proposed within the limitations set by the Development Scheme, where applicable.



Appendix B: Catchment Map

LEGEND

Cadastre

- Easement
- Lot
- Site
- Catchments_Pre

Pre Dev DEM

- Band 1 (Gray)
- 0.0000
- 3.1500
- 6.3000
- 9.4500
- 12.6000

Pre Dev Contours

- 0.25
- 1

Stormwater Culvert (Non Council)

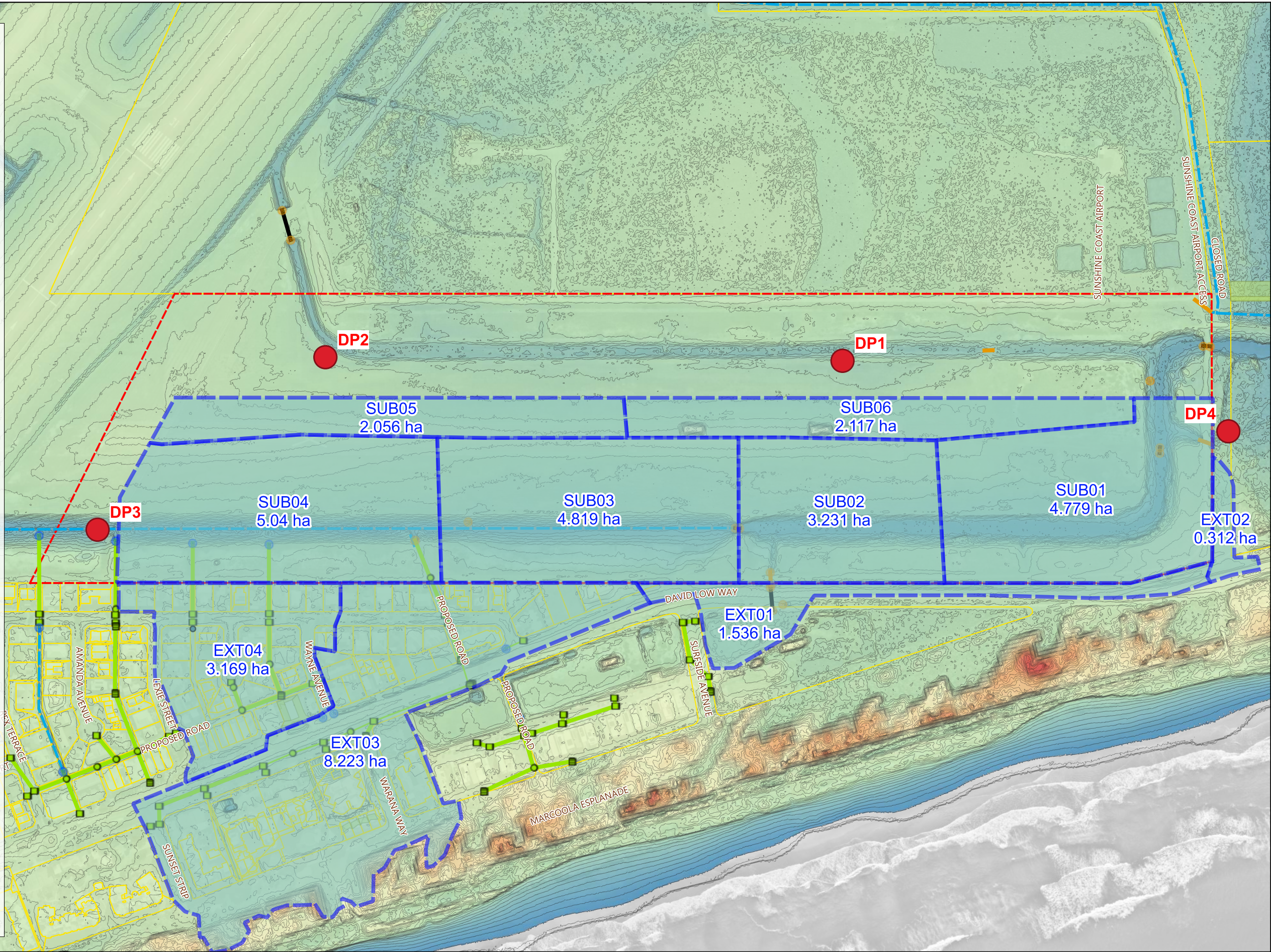
- Box Culvert
- Pipe Culvert

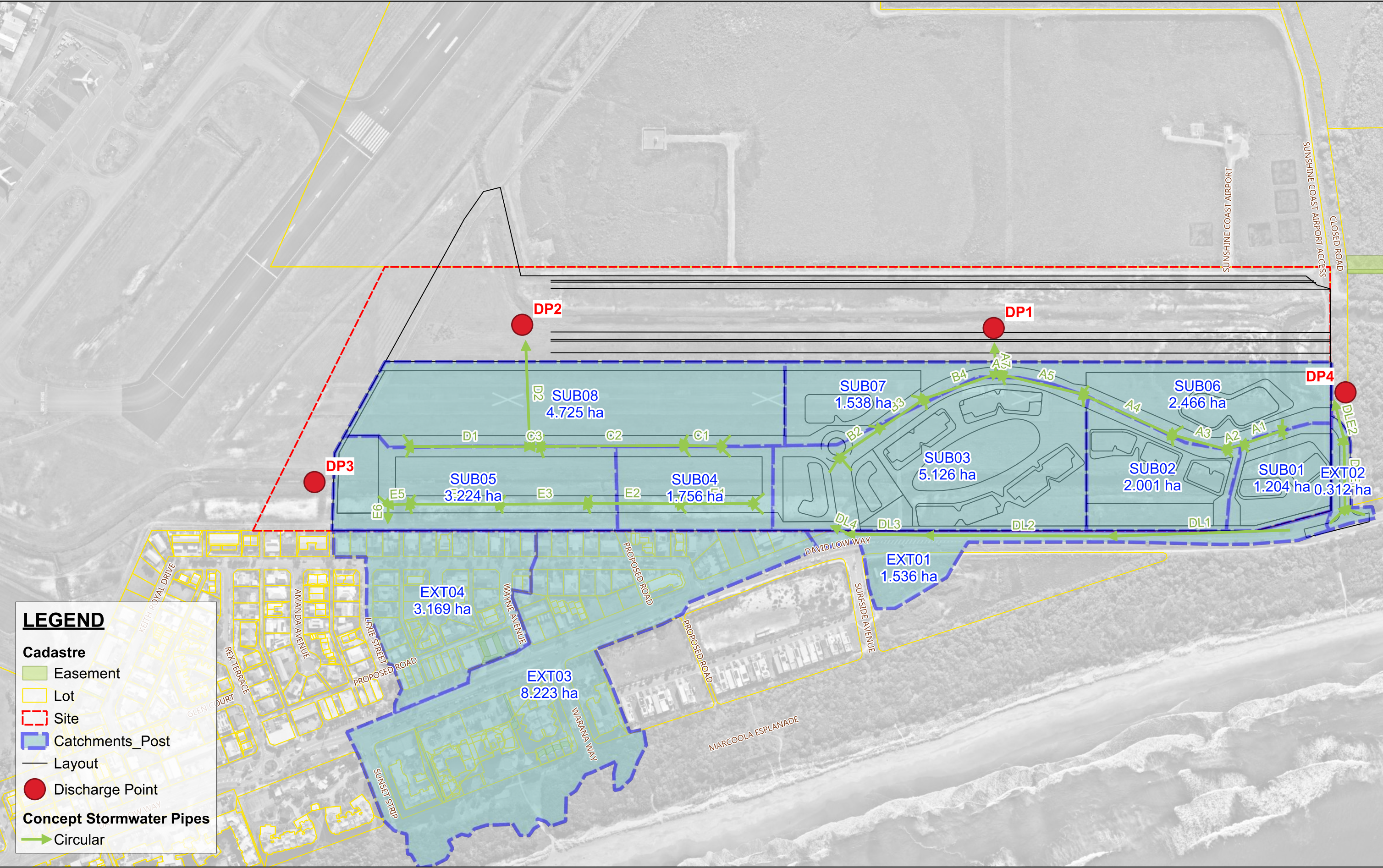
Stormwater Pipe (Council)

- Box
- Pipe

Stormwater Pit (Council)

- CatchPit
- EndCap
- FieldInlet
- Manhole
- Stormwater End Structure (Council)
- Stormwater End Structure (Non Council)
- Stormwater Open Drain (Council)
- Discharge Point





LEGEND

- Cadastre**
- Easement
 - Lot
 - Site
 - Catchments_Post
 - Layout
- Concept Stormwater Pipes**
- Circular



RPS AAP CONSULTING PTY LTD	Aug 2026
Sunshine Coast Airport North Precinct	P004148
WBNM - Catchment Delineation - Post Development	B02

Appendix C: Calculations and Data

RATIONAL METHOD CALCULATIONS

Project:

P004148 SCC Airport

Location of Discharge:

Site

Catchment Condition:

Pre Developed Site

Other Comments:

Full Site and External

Time of Concentration	48.6 minutes				
	External	Site		Total	
Sub-Catchment Areas	13.231	22.024		35.26	ha
C10 Runoff Coefficients	0.86	0.86			
10yr 1hr Intensity (mm/hr)	74.50				

AEP %	Rainfall Intensity (mm/hr)	Depth (mm)	Fy	Runoff Coefficients			Discharges (cumecs)			TOTAL
				External	Site		External	Site		
63.2	46.9	38	0.80	0.69	0.69	0.00	1.186	1.974	0.000	3.159
50	52.9	43	0.85	0.73	0.73	0.00	1.421	2.365	0.000	3.785
20	71.6	58	0.95	0.82	0.82	0.00	2.151	3.581	0.000	5.732
10	84.4	68	1.00	0.86	0.86	0.00	2.666	4.438	0.000	7.105
5	96.6	78	1.05	0.90	0.90	0.00	3.205	5.335	0.000	8.540
2	113.1	92	1.15	0.99	0.99	0.00	4.112	6.845	0.000	10.958
1	126.7	103	1.20	1.00	1.00	0.00	4.655	7.748	0.000	12.403

Upper Catchment Slope	0.95%
Overland Flow	48.6 min
Channel Travel Length	1030 metres
Channel Fall	0.5 metres
Time of Concentration @ u/s bdy	48.6

Table C1

Mannings Channel Calculation - East Drain 1in200 WBNM 0.06n - 1% AEP Capacity

Flow Depth	2.199	m
Base Width	4	m
Swale Batter 1 1 in :	2	
Swale Batter 2 1 in :	2	
Freeboard Depth	0.3	m
Freeboard Batter 1 1 in :	2	
Freeboard Batter 2 1 in :	2	
Top of Channel Width	14.0	m
Flow Width	12.8	m
Slope	0.05%	
Mannings 'n'	0.06	
Area	18.461	m ²
Wetted Perimeter	13.832	m
Hydraulic Radius	1.335	m
Calculated V	0.452	m/s
Calculated Q	8.341	m ³ /s
Calculated d*V	0.993	m ² /s

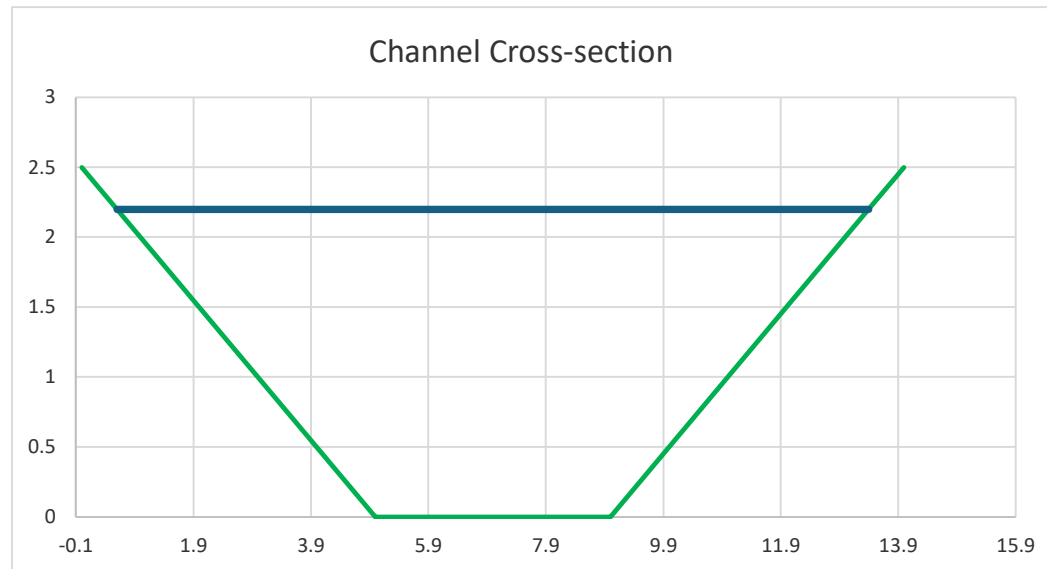


Table C1

```
1 Results - ARR Data Hub
2 [STARTTXT]
3
4 Input Data Information
5 [INPUTDATA]
6 Latitude,-26.596449
7 Longitude,153.094396
8 [END_INPUTDATA]
9
10 River Region
11 [RIVREG]
12 Division,North East Coast
13 River Number,41
14 River Name,Maroochy River
15 [RIVREG_META]
16 Time Accessed,24 June 2026 06:05PM
17 Version,2016_v1
18 [END_RIVREG]
19
20 ARF Parameters
21 [LONGARF]
22 Zone,East Coast North
23 a,0.327
24 b,0.241
25 c,0.448
26 d,0.36
27 e,0.00096
28 f,0.48
29 g,-0.21
30 h,0.012
31 i,-0.0013
32 [LONGARF_META]
33 Time Accessed,24 June 2026 06:05PM
34 Version,2016_v1
35 [END_LONGARF]
36
37 Storm Losses
38 [LOSSES]
39 ID,19340.0
40 Storm Initial Losses (mm),35.0
41 Storm Continuing Losses (mm/h),2.3
42 [LOSSES_META]
43 Time Accessed,24 June 2026 06:05PM
44 Version,2016_v1
45 [END_LOSSES]
46
47 Temporal Patterns
48 [TP]
49 code,ECnorth
50 Label,East Coast North
51 [TP_META]
52 Time Accessed,24 June 2026 06:05PM
53 Version,2016_v2
54 [END_TP]
55
56 Areal Temporal Patterns
57 [ATP]
58 code,ECnorth
59 arealabel,East Coast North
60 [ATP_META]
61 Time Accessed,24 June 2026 06:05PM
62 Version,2016_v2
63 [END_ATP]
64
65 Median Preburst Depths and Ratios
66 [PREBURST]
67 min (h)\AEP(%) ,50,20,10,5,2,1
68 60 (1.0),6.3 (0.137),10.4 (0.165),13.1 (0.176),15.7 (0.183),15.2 (0.150),14.8 (0.131)
69 90 (1.5),13.0 (0.240),15.2 (0.204),16.7 (0.188),18.1 (0.176),20.3 (0.166),22.0 (0.160)
70 120 (2.0),11.9 (0.198),18.2 (0.217),22.3 (0.223),26.3 (0.225),23.9 (0.171),22.1
    (0.140)
71 180 (3.0),22.9 (0.326),26.4 (0.266),28.7 (0.240),30.9 (0.220),75.2 (0.446),108.4
    (0.568)
```

```

72 360 (6.0),19.3 (0.209),44.3 (0.332),60.9 (0.375),76.7 (0.400),110.7 (0.476),136.1
    (0.514)
73 720 (12.0),16.3 (0.132),38.8 (0.216),53.8 (0.243),68.1 (0.259),83.3 (0.260),94.7
    (0.259)
74 1080 (18.0),10.9 (0.075),35.0 (0.164),51.0 (0.194),66.4 (0.211),89.6 (0.233),107.0
    (0.244)
75 1440 (24.0),11.4 (0.070),23.5 (0.098),31.5 (0.106),39.2 (0.111),59.1 (0.136),74.1
    (0.149)
76 2160 (36.0),2.1 (0.011),12.4 (0.044),19.2 (0.056),25.7 (0.062),52.5 (0.102),72.5
    (0.123)
77 2880 (48.0),0.0 (0.000),6.4 (0.021),10.7 (0.028),14.7 (0.032),42.7 (0.075),63.7
    (0.096)
78 4320 (72.0),0.0 (0.000),4.1 (0.012),6.8 (0.016),9.4 (0.018),11.0 (0.017),12.1 (0.016)
79 [PREBURST_META]
80 Time Accessed,24 June 2026 06:05PM
81 Version,2018_v1
82 Note,Preburst interpolation methods for catchment wide preburst has been slightly
    altered. Point values remain unchanged.
83 [END_PREBURST]From preburst class
84
85 10% Preburst Depths
86 [PREBURST10]
87 min (h)\AEP(%),50,20,10,5,2,1
88 60 (1.0),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000)
89 90 (1.5),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000)
90 120 (2.0),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.6 (0.004),1.0 (0.007)
91 180 (3.0),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000)
92 360 (6.0),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),2.2 (0.009),3.8 (0.014)
93 720 (12.0),0.0 (0.000),0.6 (0.003),0.9 (0.004),1.3 (0.005),0.5 (0.002),0.0 (0.000)
94 1080 (18.0),0.0 (0.000),0.1 (0.000),0.2 (0.001),0.2 (0.001),0.2 (0.001),6.8 (0.018),11.8 (0.027)
95 1440 (24.0),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),17.8 (0.041),31.1 (0.062)
96 2160 (36.0),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),1.1 (0.002),1.9 (0.003)
97 2880 (48.0),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000)
98 4320 (72.0),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000)
99 [PREBURST10_META]
100 Time Accessed,24 June 2026 06:05PM
101 Version,2018_v1
102 Note,Preburst interpolation methods for catchment wide preburst has been slightly
    altered. Point values remain unchanged.
103 [END_PREBURST10]From preburst class
104
105 25% Preburst Depths
106 [PREBURST25]
107 min (h)\AEP(%),50,20,10,5,2,1
108 60 (1.0),0.0 (0.001),0.5 (0.008),0.8 (0.010),1.0 (0.012),3.8 (0.037),5.8 (0.052)
109 90 (1.5),0.0 (0.000),0.9 (0.012),1.5 (0.017),2.1 (0.020),3.2 (0.027),4.1 (0.030)
110 120 (2.0),0.5 (0.009),1.6 (0.019),2.3 (0.023),3.0 (0.025),4.6 (0.033),5.8 (0.037)
111 180 (3.0),0.6 (0.009),1.4 (0.015),2.0 (0.017),2.5 (0.018),4.0 (0.024),5.1 (0.027)
112 360 (6.0),2.9 (0.031),4.3 (0.033),5.3 (0.033),6.2 (0.032),29.9 (0.129),47.7 (0.180)
113 720 (12.0),0.9 (0.008),6.6 (0.036),10.3 (0.047),13.9 (0.053),29.9 (0.093),41.8 (0.115)
114 1080 (18.0),0.0 (0.000),4.0 (0.019),6.7 (0.025),9.2 (0.029),35.2 (0.092),54.7 (0.125)
115 1440 (24.0),0.0 (0.000),3.2 (0.014),5.4 (0.018),7.4 (0.021),28.5 (0.066),44.3 (0.089)
116 2160 (36.0),0.0 (0.000),0.1 (0.000),0.2 (0.001),0.3 (0.001),13.2 (0.026),22.9 (0.039)
117 2880 (48.0),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),5.2 (0.009),9.1 (0.014)
118 4320 (72.0),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000),0.0 (0.000)
119 [PREBURST25_META]
120 Time Accessed,24 June 2026 06:05PM
121 Version,2018_v1
122 Note,Preburst interpolation methods for catchment wide preburst has been slightly
    altered. Point values remain unchanged.
123 [END_PREBURST25]From preburst class
124
125 75% Preburst Depths
126 [PREBURST75]
127 min (h)\AEP(%),50,20,10,5,2,1
128 60 (1.0),41.4 (0.895),40.9 (0.650),40.7 (0.546),40.4 (0.471),56.3 (0.557),68.3 (0.605)
129 90 (1.5),50.4 (0.934),74.4 (1.000),90.3 (1.019),105.6 (1.027),112.9 (0.924),118.3
    (0.861)
130 120 (2.0),54.3 (0.903),86.5 (1.033),107.7 (1.074),128.1 (1.096),170.8 (1.223),202.8
    (1.286)
131 180 (3.0),57.0 (0.812),95.3 (0.962),120.6 (1.009),144.9 (1.034),190.4 (1.130),224.5
    (1.175)
132 360 (6.0),49.2 (0.532),106.5 (0.799),144.4 (0.889),180.8 (0.942),238.7 (1.027),282.0

```

(1.066)
133 720 (12.0),45.1 (0.368),106.2 (0.590),146.6 (0.663),185.4 (0.705),208.4 (0.651),225.7
(0.618)
134 1080 (18.0),45.5 (0.315),88.9 (0.416),117.7 (0.447),145.3 (0.462),211.0 (0.550),260.3
(0.593)
135 1440 (24.0),34.9 (0.216),65.9 (0.274),86.4 (0.291),106.1 (0.299),165.4 (0.381),209.9
(0.421)
136 2160 (36.0),23.0 (0.123),58.7 (0.210),82.4 (0.238),105.1 (0.253),128.7 (0.251),146.4
(0.248)
137 2880 (48.0),17.5 (0.085),45.5 (0.148),64.1 (0.168),81.8 (0.179),106.0 (0.186),124.1
(0.188)
138 4320 (72.0),5.4 (0.023),30.7 (0.089),47.4 (0.110),63.5 (0.123),80.1 (0.123),92.6
(0.122)
139 [PREBURST75_META]
140 Time Accessed,24 June 2026 06:05PM
141 Version,2018_v1
142 Note,Preburst interpolation methods for catchment wide preburst has been slightly
altered. Point values remain unchanged.
143 [END_PREBURST75]From preburst class
144
145 90% Preburst Depths
146 [PREBURST90]
147 min (h)\AEP(%),50,20,10,5,2,1
148 60 (1.0),108.9 (2.356),166.4 (2.642),204.4 (2.745),240.9 (2.808),237.6 (2.351),235.0
(2.082)
149 90 (1.5),135.5 (2.512),184.9 (2.485),217.6 (2.455),249.0 (2.421),276.3 (2.261),296.8
(2.160)
150 120 (2.0),129.4 (2.152),194.5 (2.324),237.7 (2.370),279.0 (2.387),284.2 (2.035),288.1
(1.828)
151 180 (3.0),159.7 (2.275),229.1 (2.312),275.0 (2.301),319.0 (2.276),369.5 (2.193),407.4
(2.133)
152 360 (6.0),165.3 (1.790),232.7 (1.746),277.3 (1.708),320.1 (1.667),479.7 (2.064),599.4
(2.265)
153 720 (12.0),120.4 (0.982),192.6 (1.069),240.4 (1.087),286.2 (1.088),365.8
(1.143),425.5 (1.165)
154 1080 (18.0),95.5 (0.661),150.8 (0.705),187.4 (0.711),222.6 (0.708),308.4
(0.804),372.8 (0.849)
155 1440 (24.0),99.7 (0.616),161.8 (0.674),203.0 (0.685),242.5 (0.685),318.6
(0.733),375.6 (0.754)
156 2160 (36.0),73.0 (0.390),125.6 (0.450),160.4 (0.464),193.8 (0.467),287.2
(0.561),357.2 (0.605)
157 2880 (48.0),54.3 (0.264),128.6 (0.419),177.8 (0.466),225.0 (0.491),254.3
(0.446),276.2 (0.418)
158 4320 (72.0),41.0 (0.177),69.7 (0.202),88.6 (0.206),106.8 (0.206),136.5 (0.210),158.8
(0.209)
159 [PREBURST90_META]
160 Time Accessed,24 June 2026 06:05PM
161 Version,2018_v1
162 Note,Preburst interpolation methods for catchment wide preburst has been slightly
altered. Point values remain unchanged.
163 [END_PREBURST90]From preburst class
164
165 Climate Change Factors
166 [CCF]
167 [SSP1-2.6]
168 ,<1 hour,1.5 Hours,2 Hours,3 Hours,4.5 Hours,6 Hours,9 Hours,12 Hours,18 Hours,>24
Hours
169 2030,1.18,1.17,1.16,1.14,1.13,1.12,1.12,1.11,1.1,1.1
170 2040,1.21,1.19,1.17,1.16,1.15,1.14,1.13,1.12,1.11,1.11
171 2050,1.22,1.2,1.18,1.17,1.15,1.15,1.14,1.13,1.12,1.11
172 2060,1.23,1.21,1.2,1.18,1.17,1.16,1.15,1.14,1.13,1.12
173 2070,1.24,1.22,1.2,1.18,1.17,1.16,1.15,1.14,1.13,1.12
174 2080,1.23,1.21,1.2,1.18,1.17,1.16,1.15,1.14,1.13,1.12
175 2090,1.23,1.21,1.2,1.18,1.17,1.16,1.15,1.14,1.13,1.12
176 2100,1.22,1.2,1.19,1.17,1.16,1.15,1.14,1.13,1.12,1.12
177 [END_SSP1-2.6]
178 [SSP2-4.5]
179 ,<1 hour,1.5 Hours,2 Hours,3 Hours,4.5 Hours,6 Hours,9 Hours,12 Hours,18 Hours,>24
Hours
180 2030,1.18,1.17,1.16,1.14,1.13,1.12,1.12,1.11,1.1,1.1
181 2040,1.22,1.2,1.19,1.17,1.16,1.15,1.14,1.13,1.12,1.12
182 2050,1.27,1.24,1.23,1.21,1.19,1.18,1.17,1.16,1.15,1.14
183 2060,1.3,1.27,1.25,1.23,1.21,1.2,1.19,1.18,1.16,1.16

184 2070,1.33,1.3,1.28,1.26,1.24,1.22,1.21,1.19,1.18,1.17
185 2080,1.37,1.33,1.31,1.28,1.26,1.24,1.22,1.21,1.2,1.19
186 2090,1.4,1.36,1.34,1.31,1.28,1.26,1.24,1.23,1.21,1.2
187 2100,1.41,1.37,1.35,1.32,1.29,1.27,1.25,1.24,1.22,1.21
188 [END_SSP2-4.5]
189 [SSP3-7.0]
190 ,<1 hour,1.5 Hours,2 Hours,3 Hours,4.5 Hours,6 Hours,9 Hours,12 Hours,18 Hours,>24
Hours
191 2030,1.18,1.17,1.16,1.14,1.13,1.12,1.12,1.11,1.1,1.1
192 2040,1.23,1.21,1.2,1.18,1.17,1.16,1.15,1.14,1.13,1.12
193 2050,1.29,1.26,1.24,1.22,1.2,1.19,1.18,1.17,1.16,1.15
194 2060,1.35,1.32,1.3,1.27,1.25,1.23,1.22,1.2,1.19,1.18
195 2070,1.42,1.38,1.35,1.32,1.29,1.28,1.26,1.24,1.22,1.21
196 2080,1.5,1.45,1.42,1.38,1.35,1.33,1.3,1.28,1.26,1.25
197 2090,1.59,1.53,1.49,1.44,1.4,1.38,1.35,1.33,1.3,1.29
198 2100,1.66,1.59,1.55,1.5,1.45,1.42,1.39,1.37,1.34,1.32
199 [END_SSP3-7.0]
200 [SSP5-8.5]
201 ,<1 hour,1.5 Hours,2 Hours,3 Hours,4.5 Hours,6 Hours,9 Hours,12 Hours,18 Hours,>24
Hours
202 2030,1.2,1.18,1.17,1.16,1.14,1.13,1.13,1.12,1.11,1.11
203 2040,1.26,1.24,1.22,1.2,1.18,1.17,1.16,1.15,1.14,1.14
204 2050,1.34,1.31,1.29,1.26,1.24,1.23,1.21,1.2,1.18,1.18
205 2060,1.42,1.38,1.35,1.32,1.29,1.28,1.26,1.24,1.22,1.21
206 2070,1.52,1.47,1.43,1.4,1.36,1.34,1.31,1.29,1.27,1.26
207 2080,1.63,1.57,1.52,1.48,1.43,1.4,1.37,1.35,1.33,1.31
208 2090,1.77,1.69,1.64,1.58,1.52,1.49,1.45,1.42,1.39,1.37
209 2100,1.86,1.77,1.71,1.64,1.58,1.54,1.5,1.47,1.43,1.41
210 [END_SSP5-8.5]
211 [Climate_Change_INITIAL_LOSS]
212 ,Losses SSP1-2.6,Losses SSP2-4.5,Losses SSP3-7.0,Losses SSP5-8.5
213 2030,1.02,1.02,1.02,1.03
214 2040,1.03,1.03,1.03,1.03
215 2050,1.03,1.03,1.04,1.04
216 2060,1.03,1.04,1.04,1.05
217 2070,1.03,1.04,1.05,1.06
218 2080,1.03,1.05,1.06,1.07
219 2090,1.03,1.05,1.07,1.08
220 2100,1.03,1.05,1.07,1.09
221 [END_Climate_Change_INITIAL_LOSS]
222 [Climate_Change_CONTINUING_LOSS]
223 ,Losses SSP1-2.6,Losses SSP2-4.5,Losses SSP3-7.0,Losses SSP5-8.5
224 2030,1.04,1.05,1.05,1.05
225 2040,1.05,1.05,1.06,1.06
226 2050,1.06,1.06,1.07,1.08
227 2060,1.06,1.07,1.08,1.1
228 2070,1.06,1.08,1.1,1.12
229 2080,1.06,1.09,1.11,1.14
230 2090,1.06,1.09,1.13,1.16
231 2100,1.06,1.1,1.14,1.18
232 [END_Climate_Change_CONTINUING_LOSS]
233 [TEMPERATURE_CHANGES]
234 ,SSP1-2.6,SSP2-4.5,SSP3-7.0,SSP5-8.5
235 2030,1.2,1.2,1.2,1.3
236 2040,1.3,1.4,1.5,1.6
237 2050,1.4,1.7,1.8,2.1
238 2060,1.5,1.9,2.2,2.5
239 2070,1.5,2.1,2.5,3.0
240 2080,1.5,2.2,2.9,3.5
241 2090,1.5,2.4,3.3,4.1
242 2100,1.4,2.5,3.6,4.5
243 [END_TEMPERATURE_CHANGES]
244
245 [CCF_META]
246 Time Accessed,24 June 2026 06:05PM
247 Version,2024_v1
248 Note,Updated climate change factors for IFD Initial loss and continuing loss based on
IPCC AR6 temperature increases from the updated Climate Change Considerations (Book
1: Chapter 6) in ARR (Version 4.2). ARR recommends the use of Current and near-term
(2030 midpoint). Medium-term (2050 midpoint) and Long-term (2090 midpoint)
249 [END_CCF]
250