



Technical Paper - Flood Risk Assessment

Lord Howe Island Critical Infrastructure Project

Prepared for: APP Corporation Pty Ltd
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Executive Summary

This Flood Risk Assessment Technical Paper addresses the SEARs for the Lord Howe Island Critical Infrastructure Project. It documents:

- the flooding behaviour for the baseline scenario as well as the developed site conditions for the South and North Zones for a range of flood events up to the probable maximum flood (taking into account sea level rise and storm intensity due to climate change).
- the review of:
 - potential increases in the flood affectation of properties, assets and infrastructure
 - potential impacts the development may have upon existing community emergency management arrangements for flooding
 - potential impacts the development may have on the social and economic costs to the community as a consequence of flooding
- flood management objectives and outcomes
- the flood risk assessment.

Flooding on the island was most recently assessed as part of the Lord Howe Island Floodplain Management Plan (WMAwater, 2021). This flood study established 3 separate modelled catchments using the TUFLOW software; Kings Beach (KB), Airport and Pinetrees to Steven's Reserve (PTSR). The latter two have been used as a base to assess potential impacts of the Project's South Zone and North Zone respectively.

To assess the flood impacts of the proposed development at a more localised and detailed scale, it was necessary to update the South (Airport) and North (PTSR) models for this assessment as follows:

- Baseline scenario model: This scenario establishes a baseline for flood behaviour within the Project that is reflective of the existing local landforms, land use and stormwater drainage network. Existing topography and drainage networks captured from site survey were included.
- Developed scenario model: This scenario uses the baseline scenario model as a base with the addition of relevant details of the proposed development.

The baseline and developed scenario TUFLOW models were run for 20% AEP, 5% AEP, 1% AEP and Probable Maximum Flood (PMF) design flood events, for both the North Zone and South Zone.

For the South Zone, the model results show that:

- There is no change in flood levels outside of the South Zone between the baseline and developed scenarios.
- The WMF and fuel bowser are outside the floodplain for all events up to and including the PMF.
- The proposed dog kennels were outside the 1% AEP flood extent, however, did fall within the PMF extent.
- The proposed finished floor levels for the dog kennel facility have been set at or above the Flood Planning Level (1% AEP + 0.3m freeboard).
- The effect of climate change on flood behaviour was minimal, resulting in no noteworthy change to flood behaviour across the Zone.

For the North Zone, the model results show that:

- Flooding is negligible in this zone, with shallow sheet flow (less than 10mm) even in the PMF event.
- There is no change in flood levels outside of North Zone due between the baseline and developed scenarios.

- The proposed Unstuffing Shed has some minor ponding on the uphill (i.e. eastern) side, however this is able to be readily managed through minor stormwater and grading design development.
- Given flooding is minimal in all events up to and including the PMF, the proposed finished floor levels have been set above surrounding surface levels.
- The effect of climate change on flood behaviour was minimal, resulting in no noteworthy change to flood behaviour across the North Zone.

As noted above, there is minimal change to flood behaviour as a result of the Project. Therefore there is not expected to be any impact on the existing emergency plan for Lord Howe Island. The dog kennels in the South Zone are the only component of the Project within the PMF extent. With current design floor levels, the building will experience 0.215m of flood depth in the PMF. Given the kennels are not significantly isolated in the PMF flood, this allows for 'shelter in place' to be a suitable emergency option. Alternatively, the lowest point of ingress to the kennel building (currently at 4.355mAHD) could be elevated to above the PMF flood level (4.57mAHD) to provide additional safety. Evacuation to the flood immune WMF site via access tracks is also a viable emergency strategy.

Glossary

Term	Description
AEP	Annual Exceedance Probability. The probability that a given rainfall total accumulated over a given duration will be exceeded in any one year.
ARI	Average Recurrence Interval. The average or expected value of the periods between exceedances of a given rainfall total accumulated over a given duration. It is implicit in this definition that the periods between exceedances are generally random
DPHI	Department of Planning, Housing and Infrastructure
EPL	Environment Protection Licence
LHIB	Lord Howe Island Board
FHF	Freight Handling Facility
LoLo	Lift-on Lift-off
MRF	Material Recovery Facility
NSW DCCEEW	New South Wales Department of Climate Change, Energy, the Environment and Water
RoRo	Roll-on Roll-off
SEARs	Secretary's Environmental Assessment Requirements
WMF	Waste Management Facility
WWTP	Wastewater Treatment Plant

1. Introduction

The NSW Department of Climate Change, Energy, the Environment and Water ('NSW DCCEEW' or 'Proponent'), on behalf of the Lord Howe Island Board (LHIB) proposes the construction, operation and maintenance of new marine infrastructure, cargo handling facility, biosecurity infrastructure and waste management facility on Lord Howe Island, and associated landscape and vegetation restoration.

The Proponent seeks development consent for the Project as Critical State Significant Infrastructure (CSSI) under Division 5.2, subdivision 5.13 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The Project is a controlled action (2025/10188) under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act 1999) and will be assessed under the bilateral agreement between the NSW and Commonwealth Governments.

1.1 The Project

The Project is part of the broader Lord Howe Island Critical Infrastructure Program; however, the aspects being considered within this report comprise the construction, operation and maintenance of the following on Lord Howe Island:

- Freight handling facility which includes new and upgraded marine infrastructure (new piled vessel ramp and upgraded jetty and boat ramp), boat wash down and maintenance area, cargo loading/offloading areas, biosecurity infrastructure, adaptive reuse of the 'Old Cargo Shed' and 'Ocean View' heritage buildings, viewing area, picnic area, landscaping, retaining walls, amenities and vehicle and boat trailer parking;
- Waste management facility (WMF) upgrades which includes new storage sheds and materials processing facilities (including for organic material), wastewater treatment plant (WWTP) and waste receival area (including chemical and hazardous waste), hardstand and roads, staff office, and selective dune restoration at the existing WMF;
- Dedicated dog kennels to house detection dogs; and
- Self-service fuel bowser along Old Lagoon Road.

1.2 Project Location

The Project is on Lord Howe Island, which is a 1,455-hectare (ha) island located about 770 kilometres (km) to the northeast of Sydney, NSW, and about 570 km east from Port Macquarie, NSW. Port Macquarie is the nearest mainland port to Lord Howe Island and is the base for the current marine freight service. Lord Howe Island is part of the state of NSW and is regarded legally as an unincorporated area administered by the LHIB.

The Project Area comprises the North Zone and the South Zone as shown in Figure 1-2 and Figure 1-3. The North Zone includes marine and land-based infrastructure, including a freight handling facility, a piled vessel ramp and biosecurity infrastructure. The South Zone includes the waste management facility, dog kennels and fuel bowser.





Figure 1-2 Project Area North Zone



Figure 1-3 Project Area South Zone

1.3 Purpose of this Report

Secretary's Environmental Assessment Requirements (SEARs) were issued by the Department of Planning, Housing and Infrastructure (DPHI) on 14 April 2025. Supplementary SEARs were issued on 08 August 2025.

In accordance with the Project SEARs, SMEC Australia Pty Ltd (SMEC) has prepared this Flood Risk Assessment on behalf of the Proponent to assess the potential impacts on existing flooding characteristics and the flood risk associated with the construction and operation of the Project.

The scope of this Flood Risk Assessment includes:

- establishing flood behaviour during baseline and post-developed (i.e. operational) phases for a range of design flood events including the 20% Annual Exceedance Probability (AEP), 5% AEP, 1% AEP and Probable Maximum Flood (PMF) events, as well as climate change scenarios (taking into account sea level rise and storm intensity).
- identifying potential impacts of the proposed development on:
 - adjacent properties, assets and infrastructure
 - existing community emergency management arrangements
 - the social and economic costs to the community
- identifying potential flood risks to the proposed construction and operation of the Project
- developing flood risk management and mitigation strategies.

1.3.1 Assessment Guidelines and Requirements

In preparing this Technical Paper, SMEC has reviewed the SEARs and the following guidelines, applying them where relevant to the flooding assessment:

- State Significant Infrastructure Guidelines (DPHI, 2024a)
- Social Impact Assessment Guidelines for State Significant Projects (DPIE, 2023)
- Cumulative Impact Assessment Guidelines for State Significant Projects (DPIE, 2022b)
- Undertaking Engagement Guidelines for State Significant Projects (DPHI, 2024b)
- The Lord Howe Island Local Tsunami Plan, a sub-plan of the Lord Howe Island Local Emergency Plan (EMPLAN) prepared by the NSW State Emergency Service (2020)
- Flood Risk Management Manual (NSW DPE, June 2023) – including the NSW Flood Prone Land Policy.
- Local policies, procedures and controls for flood-affected sites including:
 - Lord Howe Island Development Control Plan 2005.
 - Lord Howe Island Local Environmental Plan 2010.
 - Lord Howe Island Floodplain Management Plan (WMAwater, 2021).
 - Lord Howe Island Existing Peak Flood Depth & Flood Planning Level (WMAwater, 2021).

1.3.2 SEARs Assessment

Specific assessment against the SEARs relevant to the Flood Risk Assessment is shown in Table 1-1 below.

Table 1-1: SEARs requirements relevant to the Flood Risk Assessment

Requirement	Description	Section Addressed
7.1	Assess changes to flood behaviour during construction and operation for a full range of flood events up to the probable maximum flood (taking into account sea level rise and storm intensity due to climate change) must be assessed (and modelled where required), including:	Section 6 & Section 7
7.1a	any detrimental increases in the potential flood affectation of other properties, assets and infrastructure	Section 9.1 & Section 9.2
7.1b	impacts the development may have upon existing community emergency management arrangements for flooding. These matters must be discussed with the State Emergency Services and the Lord Howe Island Board	Section 8
7.1c	any impacts the development may have on the social and economic costs to the community as consequence of flooding	Section 9.1 & Section 9.2
7.2	Flood management objectives and outcomes must be clearly identified and substantiated to address the characteristics of the environment and relevant legislative, management and guidance requirements	Section 1.3
7.3	Prepare a flood risk assessment in accordance with relevant guidelines	All report sections.

2. Project Description

This chapter outlines the permanent infrastructure required to operate the Project, as well as the key construction elements and activities required to construct the Project. A comprehensive and detailed description of the Project is provided in the EIS, which has been relied upon for the basis of this technical assessment.

2.1 Project Overview

The indicative project layout is shown on Figures 2-1 and 2-2. The Project includes the following components:

North Zone

- Freight Handling Facility
 - New and upgraded marine infrastructure (e.g., jetty and landing facilities) and cargo interface areas for freight service operations;
 - Upgraded roads and hardstand areas to facilitate safe movement of cargo from the vessel to the Island via the freight handling facilities;
 - Biosecurity infrastructure including quarantine facilities;
 - Adaptive reuse of the existing Ocean View and Old Cargo Shed buildings;
 - Upgraded boat ramp and boat parking for recreational vessels; and
 - New public amenities (e.g., viewing area and parking).

South Zone

- Waste Management Facility
 - Relocation and reconfiguration of the organics processing infrastructure
 - Construction of a waste receival area/shed to facilitate community waste disposal;
 - Construction of a hardstand dedicated for waste storage and facilities/areas to adequately store liquid and hazardous wastes;
 - Construction of a new materials recycling facility (MRF) and new working platform to provide secure, safe operating conditions;
 - Perimeter fencing, security and restricted access upgrades; and
 - Wastewater Treatment Plant (WWTP).
- Dedicated kennel for housing detection dogs near the airport; and
- A self-service fuel bowser on Old Lagoon Road
- Detailed design, site investigations and construction of the Project, inclusive of the North Zone and South Zones, is expected to occur over a period of approximately 20 months.



Figure 2-1 Project Layout (North Zone)



Figure 2-2 Project Layout (South Zone)

2.2 Freight Handling Facility

2.2.1 Marine Infrastructure

The proposed marine infrastructure, forming part of the Freight Handling Facility (FHF), includes upgrades to the existing jetty, construction of a new piled vessel ramp adjacent to the jetty, and upgrades to the existing boat ramp at Wilsons Landing. The piled vessel ramp would facilitate the safe docking of the new marine freight vessel, safe and efficient cargo loading and unloading.

New piled vessel ramp

A new piled fixed ramp is proposed that would accommodate the landing of the new marine freight vessel and allow for “roll-on roll-off” (RoRo) cargo handling. RoRo relies on vessels with ramps so that cargo can be driven onto and off the vessel making loading and unloading of cargo easier and faster than traditional container shipping which uses cranes to lift cargo onto and off vessels.

The new piled vessel ramp would be located on the southern side of the existing jetty to enable safe docking and efficient loading and unloading of the marine freight vessel, while allowing the existing jetty to continue being used for “lift-on lift-off” (LoLo) cargo handling.

The proposed piled vessel ramp will be supported on piles to elevate the structure above the existing beach profile, thereby minimising potential impacts on adjacent shoreline processes. The ramp will be subject to further detailed engineering design and operational assessments. At this stage, it is envisaged that the ramp would generally comprise the following key materials and supporting infrastructure:

- New piles;
- Precast concrete headstocks;
- Precast concrete planks;
- Mooring and breasting piles;
- Breasting and mooring dolphins;
- Adequate fendering system as required; and
- Upgrades to the existing rock revetment wall.

Upgrades to the existing jetty

The existing jetty would be retained to support LoLo cargo handling should this capability be required. The existing jetty would be upgraded with the addition of berthing and mooring bollards and public domain furniture. The upgrades to the existing jetty would be subject to further engineering design and operational assessments.

Boat ramp refurbishment

The existing boat ramp at Wilsons Landing is currently used by smaller recreational vessels. The existing boat ramp would be refurbished to make it suitable for larger recreational vessels up to 18 m in length. The refurbishment works would include:

- Upgrading the existing boat ramp to generally comply with the applicable codes and standards including the NSW Boat Ramp Guidelines;
- Increasing the overall dimensions of the boat ramp by approximately 8.5 m in length and 1 m in width;
- Rotating the boat ramp by approximately 9 degrees to minimise the amount of rock reef clearing required to accommodate the extended length of the ramp (some trimming of the rock reef may still be required); and
- Installing mooring infrastructure such as breasting and mooring dolphins.

2.2.2 Land based Infrastructure

New, modern freight handling and biosecurity infrastructure would be constructed near the marine infrastructure to facilitate the Island’s biosecurity and quarantine requirements to screen incoming materials.

Laydown and staging area

A new dedicated laydown area is proposed for the temporary storage, staging, and handling of cargo upon arrival to the Island and prior to its departure to the mainland. Some existing vegetation may be removed to ensure sufficient area to manoeuvre forklifts and vehicles used to load and unload the vessel.

A bunded hardstand surface and/or paved area with drainage would be provided. The laydown area would provide a structured location for organising and managing cargo and freight and would be designed to accommodate various freight types including containers, bulk goods, and bulk fuel. The laydown area would be accessed via Lagoon Road.

The perimeter of the laydown and staging area would be temporarily secured during vessel loading and unloading. At other times, the area would generally be accessible to the public.

Container unstuffing/stuffing shed

A new container unstuffing/stuffing shed is proposed to serve as a cargo and handling area for the freight vessel operators. The shed would be built on a reinforced concrete slab and would be constructed of compressed fibre cement cladding, with a profiled metal roof sheeting and high level operable glazed louvres. Roller doors would be provided to accommodate forklift access. The shed would be approximately 6.7 m high and approximately 182 m² in area.

Biosecurity and quarantine facility

A new, dedicated, biosecurity and quarantine facility is proposed to support biosecurity and quarantine operations on the Island. The facility would allow biosecurity officers to inspect freight items identified as potential threats and for routine testing. The facility would be fully sealed to contain any biosecurity materials that are detected, and would be always closed to the public.

The facility would be constructed on a reinforced concrete slab with compressed fibre cement cladding and profiled metal roof. High level operable glazed louvres may be provided. The facility would be designed to allow drive-in / reverse-out operations with roller doors to allow forklift access and operations. The facility would be approximately 50m² in area. Fencing, bunding and containment measures would also be included.

Australia Post and LHIB Storage Area

A new Australia Post facility and a storage area for LHIB would be provided. The Australia Post facility would be approximately 17m² and would be used to store uncollected mail and freight managed by Australia Post.

Ocean View Boatshed and Old Cargo shed

The existing 'Ocean View' Boatshed would be used for storage to support Marine Parks and TfNSW operations. The existing annex and above-ground water tanks would be removed from the northwestern side of the boatshed to provide space for at-grade boat parking for two vessels. The new boat parking area will be on a sealed concrete slab with a finished area of approximately 100m². A new water tank would be provided (either above ground or below ground). A new viewing deck would be constructed on the southern side of the Old Cargo Shed to provide pedestrian access to the existing jetty. TfNSW, responsible for emergency response equipment, will use the Ocean View Shed to store emergency response equipment (e.g., first aid kits, chemical spill clean-up equipment etc).

Boat trailer parking area

A new driveway and removal of a Norfolk Island pine tree would be required on the northern side of the proposed stuffing/unstuffing shed to provide public access to the boat ramp from Lagoon Road while the vessel is being loaded and unloaded. Boat trailer parking would be provided adjacent to the laydown area. Parking would be designed in accordance with AS2890.1 Off-Street Parking Facilities.

2.2.3 Landscaping and Public Domain Works

Landscaping and public domain improvements are proposed as part of the Project. Public access will be incorporated into the new/upgraded marine infrastructure including for pedestrians and vehicles. Landscaping is proposed north and south of the existing jetty.

The proposed landscaping and public domain works would include:

- Upgrade the Wilsons Landing Picnic Area including new interpretive signage and furniture;
- Retain the two existing Norfolk Island Pine trees located between the Old Cargo Shed and the Marine Rescue buildings;
- Retain the existing mooring anchor adjacent to the southern car park area;
- Bicycle parking adjacent to the southern car park area;
- Feature tree planting adjacent to the vehicle entrance from Lagoon Road;
- New screen planting in a bioswale along the Lagoon Road frontage; and
- Maintain existing access points to the beach

2.3 Waste Management Facility

The Project would include upgrades to the existing Waste Management Facility (WMF) to provide a fully functioning waste reception and processing facility to service the needs of the residents of Lord Howe Island.

The WMF would include the following:

- Waste-receival area comprising a dedicated, one-way, drive-through waste drop-off facility for commercial and residential waste with clearly demarcated areas to segregate waste types (e.g., mixed-recyclables, paper and cardboard, food and organics etc.);
- A Chemical Shed with separate storage zones for the safe containment, handling, and temporary storage of waste such as paint, used oil, batteries, domestic gas cylinders, phosphorescent and other lighting tubes and smoke detectors;
- A Materials Recovery Facility (MRF), which would include a new working platform to provide secure, safe operating conditions. The MRF equipment would consist of two balers, a wrapper, hoppers, conveyors, picking station, sorting conveyor/trommel, capture bins, glass crusher and sorter. One of the balers will be for steel and aluminium cans and other waste;
- Open bunkers and dedicated storage areas to hold baled waste material, bulky goods and organics, and waste containers and/or skips awaiting shipment. These areas will be located at the northwest end of the WMF, the furthest area from public access;
- A dedicated organics processing workshop with specialised equipment to mechanically and biologically break down organic materials and include curing and storage areas for final products. The final products will be managed for odours, leachates and quality control in accordance with the Environment Protection Licences (EPL);
- A new, dedicated WWTP, which will include settling and aeration tanks, clarifiers, disinfection equipment and sludge treatment. The WWTP will be constructed within the WMF to service the Island; and
- An office/amenities building will be located adjacent to the public limit of the WMF.

The WMF will be fully fenced and secured. Access by the public will be restricted to fixed hours of operation. The design of the facility will facilitate the processing and secure storage of waste, with hardstands constructed of permeable and impermeable surfaces such as pavers, concrete or asphalt. The public will not have access to the WMF beyond the waste-receival area unless via appointment.

2.3.1 Dog Kennels and Fuel Bowser

Detection dog kennels are proposed to house the detection dogs used for biosecurity checks at the airport (daily) and freight handling facility (fortnightly). The kennels would be constructed on an existing grass area adjacent to the BoM weather station at 16 Old Lagoon Road (Lot 219 DP45732). The facility would include kennels for up to four dogs and an outdoor and indoor training area.

The proposed fuel bowser would include a concrete hard stand area and two above ground fuel containers with a self-serve bowser with credit card facilities.

2.4 Construction Sites

Two main construction sites would be required for the Project. The North Zone construction site is where the freight handling facility would be located and includes marine and land-based infrastructure. The South Zone construction site is where the WMF, dog kennels and fuel bowser would be located. The construction sites would be located within existing operational footprints, where possible, to minimise the construction footprint and disruption to the surrounding areas.

The final construction staging, sequencing, and methodology would be determined by the contractor following determination of the application.

2.5 Operation

Upon completion of construction, the new/upgraded FHF, WMF and biosecurity infrastructure will operate continuously and in tandem to facilitate the Project and the broader Lord Howe Island Critical Infrastructure Program objectives.

Operation of the Project is likely to involve:

- Cargo unloading to the cargo unstuffing facility and for onward distribution to the Island;
- Biosecurity inspection of incoming cargo, with designated quarantine room and protocols enacted as necessary to contain any identified biosecurity risks; and
- Receival, processing, and storage of waste in a manner that minimises environmental and human health risk and facilitates the efficient movement of waste to the cargo laydown area in the North Zone for removal from the Island.

2.5.1 Freight Handling Facility

The vessel generally travels to the island every fortnight. The time and day that the vessel can dock is dependent on tides and weather conditions and may vary. Cargo would be transported on the vessel using 20-foot dry containers and 20-foot reefer containers, each with a maximum load of up to 6.8 tonnes.

Cargo from the vessel would be either driven off or unloaded with small and medium sized forklifts and cranes and then placed in the loading/unloading area. The cargo would then be transported by forklifts into the cargo unstuffing shed for further inspection. Once the cargo has been fully unloaded, the vessel would be loaded with cargo for transportation back to the mainland. This would include general cargo as well as waste from the WMF that requires disposal on the mainland.

Cargo that requires biosecurity inspections would be moved into the biosecurity and quarantine room for further inspection by a quarantine officer prior to release. Quarantine and monitoring procedures would be implemented in accordance with applicable national and local biosecurity regulations, strategies, and policies to minimise the risk of serious incursions that could threaten the island's biodiversity and agricultural assets.

The loading and unloading of the vessel typically take two days to complete. During this time, the freight handling facility must remain secure. Public access to the jetty and piled vessel ramp, laydown areas and buildings within the freight handling facility would be restricted at these times. Once the vessel has departed, these areas would be publicly accessible.

2.5.2 Waste Management Facility

The operation of the existing WMF is regulated under EPL No. 10466 (EPL 10466) which regulates the types of waste and the volume and mass limits that can be processed by the WMF. The WMF would be designed to accommodate a 50% increase per month in the volume of waste that can be received (compared to the average volumes of waste received between 2019 and 2022).

The hours of operation for the WMF would be between 6:30am to 3:00pm Monday to Saturday. Reception of waste (i.e., waste drop off by public) would generally occur between 6:30am to 10am Monday, Wednesday and Saturday during the winter months with an additional day (Friday) provided during summer for general domestic and chemical waste drop off.

Waste storage would be designed to provide one additional month of storage capacity as a contingency in the event that waste is unable to be processed during a given month. This also applies to the outcomes of some processes like recyclables and glass from the MRF (bales and maxi-bags).

The operation of the WMF would include:

- Receiving area and site office
- Material Recovery Facility
- Chemical storage
- Organics shed
- Bulky waste storage
- Wastewater Treatment Plant
- Stormwater collection
- Access and security
- Utilities and services

3. Methodology

The Flood Risk Assessment has been undertaken using the NSW guidelines for Flood Impact and Risk Assessment (DPE, 2023) as a guide. A summary of the key steps undertaken is as follows:

- Establish baseline flood behaviour:
 - review the existing model by WMAwater (2021);
 - update the existing model with recent topographic survey and drainage data to represent site specific conditions; and
 - simulate existing flood behaviour for a range of design events (1% AEP, 5% AEP, 20% AEP and the Probable Maximum Flood (PMF)).
- Establish proposed development flood behaviour:
 - update the baseline model with details of the proposed development;
 - simulate flood behaviour for a range of design events (1% AEP, 5% AEP, 20% AEP and the Probable Maximum Flood (PMF));
 - simulate flood behaviour for climate change scenarios by integrating storm intensity and sea level rise projections into the modelling.
- Flood impact and risk assessment:
 - Quantify any changes to flood behaviour of nearby properties, infrastructure or land, including upstream and downstream effects, in comparison to existing behaviour
 - Assess risks associated with flood levels
 - Assess potential impacts on emergency access and evacuation routes, coordinating with the State Emergency Services (SES) and the Lord Howe Island Board.
 - Evaluate social and economic risks, including disruptions to tourism, community services, and essential infrastructure, using flood impact overlays and consequence rating frameworks.
- Stakeholder Engagement and Emergency Management
 - Given the minimal/no impact on emergency management arrangements related to flooding, meetings with State Emergency Services (SES) were not held. This can be deferred to the next design stage if deemed to be required.
- Flood Risk Assessment Documentation:
 - Details of the flood modelling methodology adopted and description of results including mapping.
 - Advice and recommendations on actions required to address the potential increased intensity of development such that they comply with the Flood Prone Land Policy.
 - Discussion on the implications of the Ministerial Direction 4.1 Flooding under Section 9.1 of the EP&A Act.
 - Recommended structural options to be considered to minimise flood risks / impacts.

4. Background

4.1 Local Catchments

The Freight Handling Facility (FHF) is located towards the northern end of the island, adjacent to The Jetty and Lagoon Road. There is a small, local catchment to the east of the FHF as shown in Figure 4-1 below. The catchment is approximately 3.5ha in size. This catchment is included within the Pinetrees to Steven's Reserve (PTSR) model of the Lord Howe Island Floodplain Management Plan (WMAwater, 2021).



Figure 4-1: Freight Handling Facility Local Catchment

The Waste Management Facility (WMF) is located immediately to the south of the Lord Howe Island Airport. The local catchment is to the north and east and includes the airport itself, as shown in Figure 4-2 below. The local catchment is approximately 31.7ha in size. This catchment is included within the 'Airport' model of the Lord Howe Island Floodplain Management Plan (WMAwater, 2021).

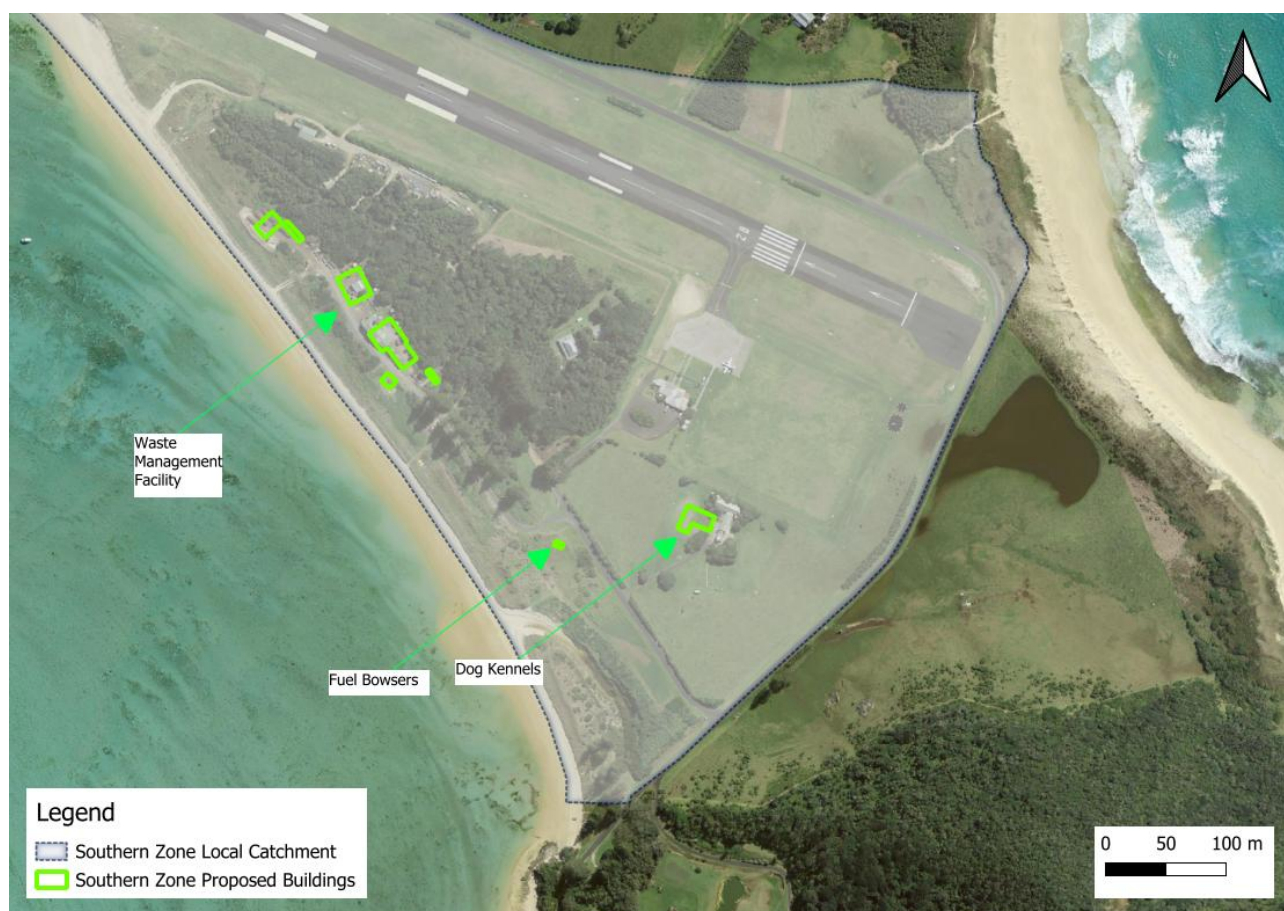


Figure 4-2: Waste Management Facility Local Catchment

4.2 Historical Flooding & Previous Flood Studies

Historical flood events of note on Lord Howe Island include:

- two large storm events in January and June of 1996. These are the worst flood events on record and major land slips were noted to have occurred in many areas across the island, including around the airport and in the North model catchment; and
- February 1998.

The Lord Howe Island Flood Study (Webb, McKeown & Associates Pty Ltd, 1998) was the original report investigating the flooding characteristics of the island. Following the 1998 storm event, the previously used design rainfall data was adjusted upwards significantly for the Lord Howe Island Floodplain Management Study (Webb, McKeown & Associates Pty Ltd, 1999). This model was then used by WMAwater to produce the current Lord Howe Island Floodplain Management Plan (WMAwater, 2021).

4.3 Climate and Rainfall

Lord Howe Island has an Australian Bureau of Meteorology (BOM) climate station (Lord Howe Island Aero: station ID 200839). Climate records from this station are available from 1988 to 2025 and show a mean maximum temperature of 25.8°C in February and mean minimum temperature of 19.1°C in July/August.

Rainfall records for this period have a mean annual rainfall of 1476 mm. The highest mean monthly rainfall is 163 mm in June and the lowest mean monthly rainfall is 100 mm in December. Monthly records are indicative of a tropical climate, with a distinct wet season between March and July.

4.3.1 Available Data and Information

The data presented in Table 4-1 below has informed this study:

Table 4-1: Data Availability and Purpose

Data Description	Data Source	Purpose in this study
Lord Howe Island Floodplain Management Plan (WMAwater, 2021)	Lord Howe Island Board	Technical report completed by WMAwater in 2021 for the Lord Howe Island Board to reflect latest flooding behaviour.
Lord Howe Island Floodplain Management Plan - Pinetrees to Steven's Reserve (PTSR) TUFLOW Model	Lord Howe Island Board	One of the 3 models associated with the above Plan. Used for establishing the baseline flood model in the North Zone area.
Lord Howe Island Floodplain Management Plan - Airport TUFLOW Model	Lord Howe Island Board	One of the 3 models associated with the above Plan. Used for establishing the baseline flood model in the South Zone (Airport) area.
North Existing Site Survey (07/11/2024)	SMEC	Provides reduced levels (mAHD) of key points (including culvert inverts) across the North Zone area.
South Existing Site Survey (07/11/2024)	SMEC	Provides reduced levels (mAHD) of key points (including culvert inverts) across the Airport area.

All geographically referenced data for this project has been projected on Map Grid of Australia (MGA) 94 Zone 57 and Australian Height Datum (AHD).

5. Flood Model Setup

To inform this flood risk assessment, flood modelling was undertaken for baseline and post development scenarios for both the North Zone and South Zone models. The modelling is described in the sections below.

5.1.1 Original Model Background & Configuration

The Lord Howe Island Floodplain Management Plan (WMAwater, 2021) hydraulic models apply inflows from rainfall-runoff hydrology models which were established utilising ARR 2016 procedures and WBNM software.

Both the South Zone (Airport) and North Zone (PTSR) hydraulic models use the two-dimensional (2D) TUFLOW HPC solver, covering their respective areas of the island. Both models extend through to the interface with the Tasman Sea. Figure 5-1 shows the location of each model on the island:

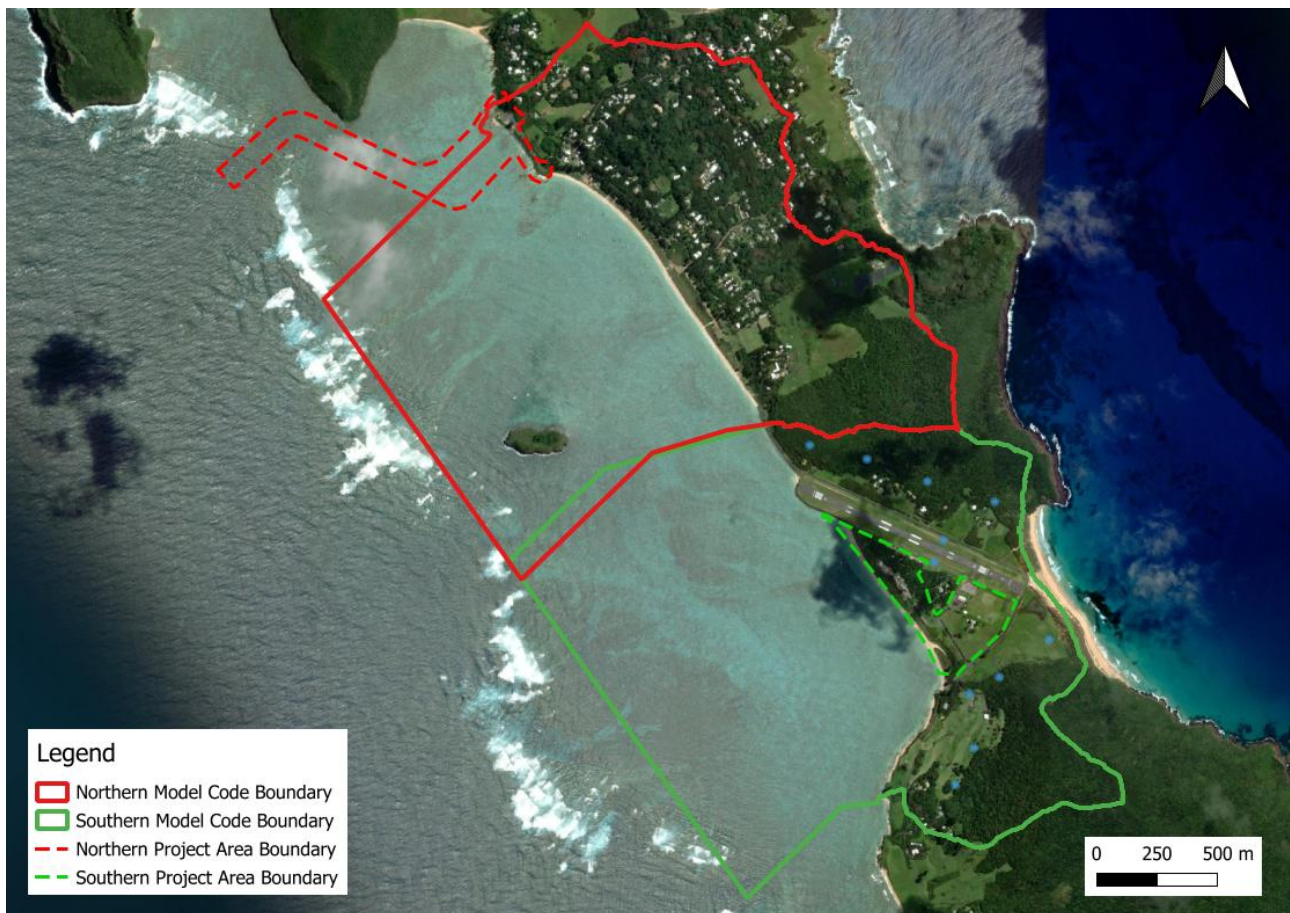


Figure 5-1: Model Locations

Both the North Zone and South Zone models have the following characteristics:

- TUFLOW Version: TUFLOW. 2018-03-AE with the implementation of the HPC solver and iSP approach.
- Topography: 1m LiDAR
- Model Grid Resolution: 2-meters
- Sub-catchment Inflows: The catchment runoff inflows have been retained from the existing hydrologic WBNM model. Inflows are applied to the TUFLOW model as flow vs. time hydrographs. These are applied at major sub-catchment inflow points. For the North Zone model, some of the larger sub-catchments close to the FHF facility were subdivided and inflow locations distributed accordingly to better represent local overland flows.
- Downstream Boundary Conditions: The downstream model boundary corresponds to the tidal water level recorded in the lagoon. The water level time series applied at this location is based on recorded tide levels at the Lord Howe Island Gauge for historic flood modelling.
- Values for the Manning's 'n': The adopted roughness values for different land use types are presented in Table 5-1.
- Stormwater Infrastructure: Stormwater trunk drainage infrastructure, such as pipes, culverts, stormwater pits, and open channels, were modelled as 1D elements linked to the 2D model grid where appropriate (1d_nwk). Key features of the North Zone Model are shown in Figure 5-2 and the South Zone Model in Figure 5-3. Both model's Manning values are summarised in Table 5-1.

Table 5-1: Model Manning's Values

Element	Manning's n value
General	0.040
Roads	0.020
Maintained Grass	0.035
Vegetated Area	0.050
Sports Field/Grass	0.035
Beach/Sand	0.025
Water	0.020



Figure 5-2: North Zone Original Model Extent & Characteristics



Figure 5-3: South Zone Original Model Extent & Characteristics

5.1.2 Model Modifications

A range of modifications were made the North Zone and South Zone models to better represent baseline conditions and then to represent the proposed development. The key modifications are summarised below.

5.1.2.1 North Zone Model

5.1.2.1.1 Baseline Scenario Model (Existing Model)

The original North Zone Model was received and rerun by SMEC for the 1% AEP design event. The results were then compared to the original flood result files to ensure the validity of the model before making any changes.

After the initial validation step, changes were made to the terrain and land use to represent the site-specific conditions. Key updates made to the model included the following:

Terrain Update and Existing Building Enforcement

The FHF project site was surveyed to attain the most up-to-date representation of current terrain. Buildings were also identified and represented using a 2d_code layer.

Local Sub-Catchment Delineation

The North Zone Model used a single 2d_sa polygon to represent inflows to the area adjacent to the FHF, as shown in Figure 5-4.

To better represent local overland flows, the local sub catchments to the FHF were delineated, and the 2d_sa polygon flows were redistributed as shown in Figure 5-5.

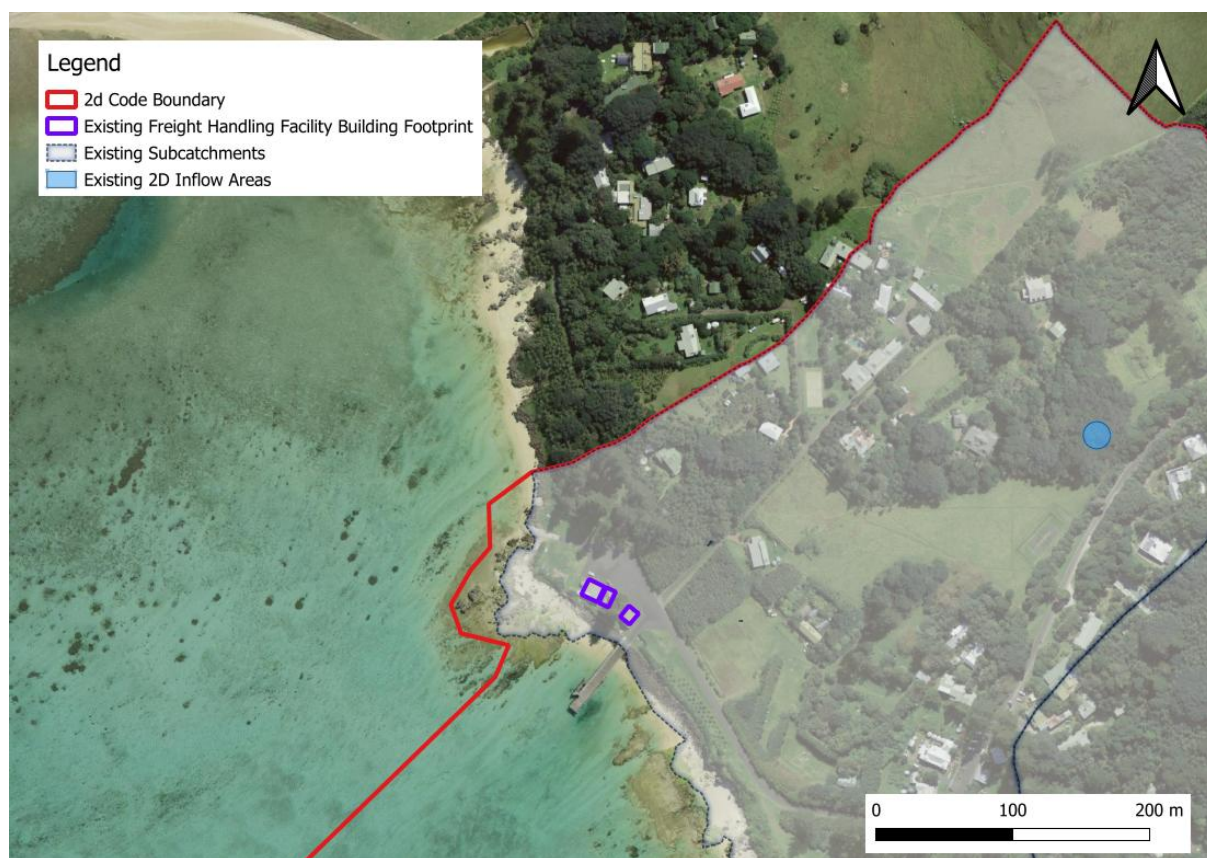


Figure 5-4: North Zone Model Original Local Sub-catchments

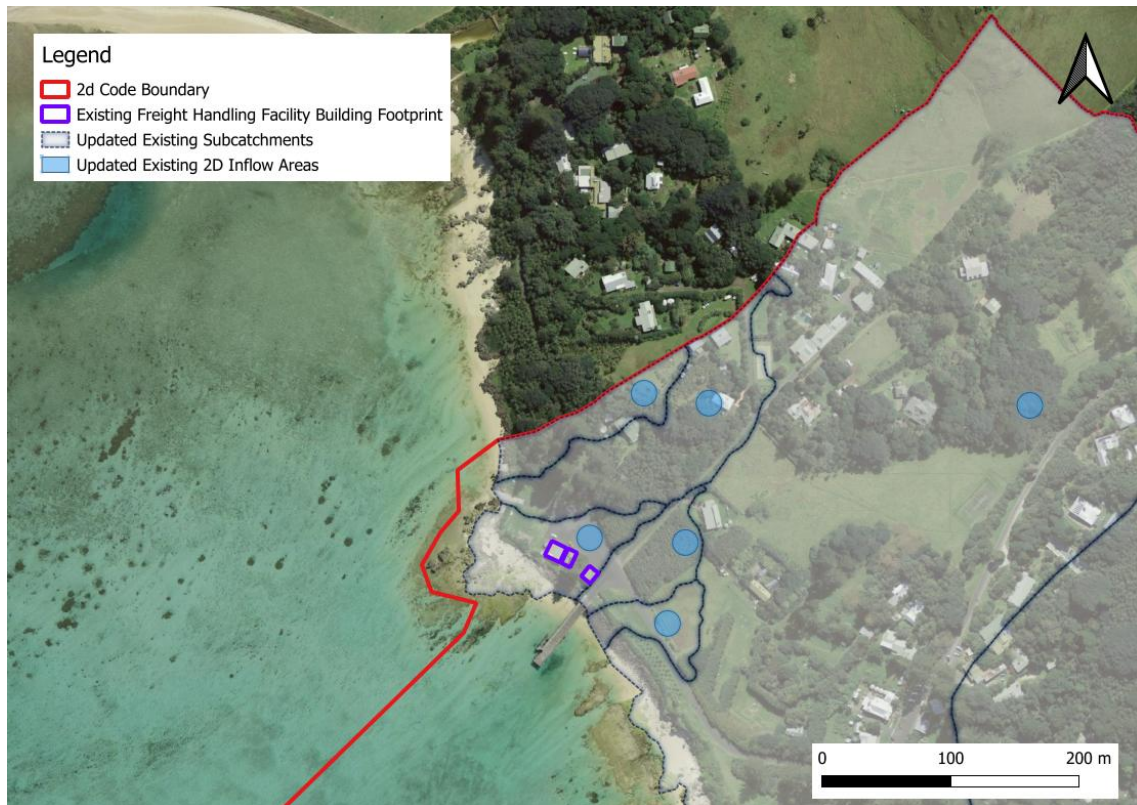


Figure 5-5: North Zone Model Updated Local Sub-catchments

Addition to 1d Network (Pits & Pipes)

Survey identified additional pits and pipes which were added to the existing drainage network in the model. The location of these pits and pipes are shown in Figure 5-6 below:

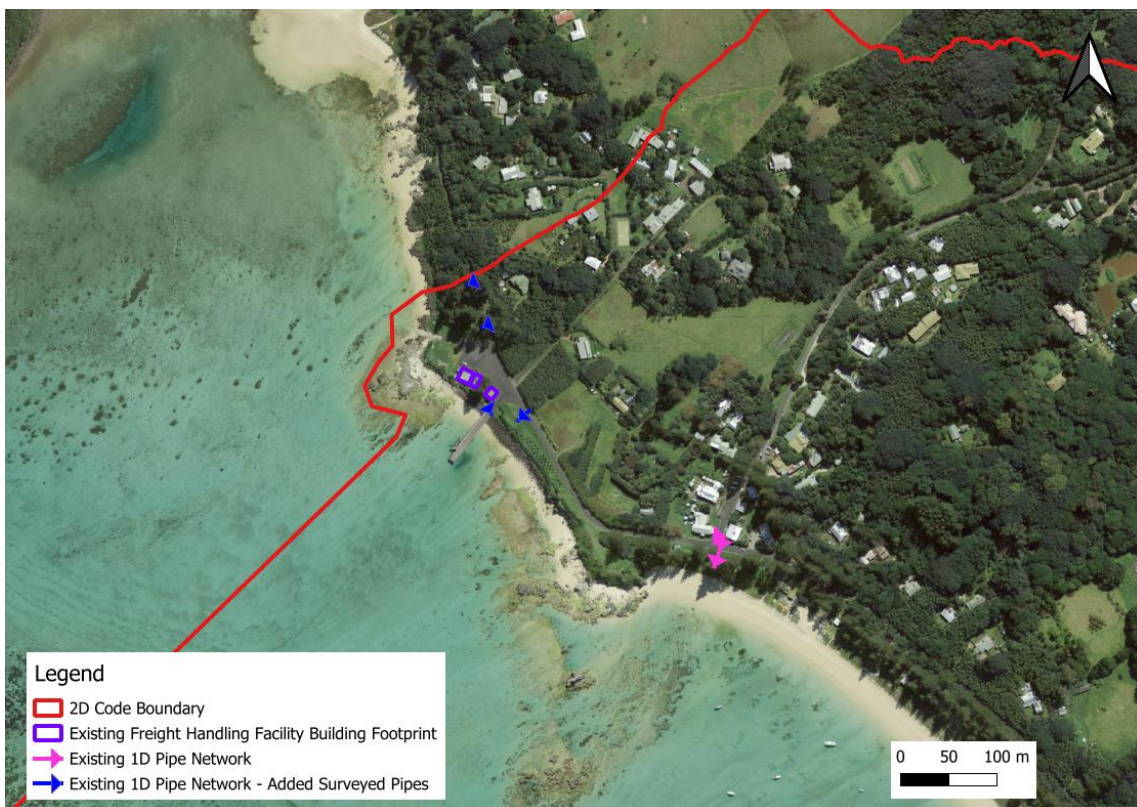


Figure 5-6: North Zone Model Updated Existing 1D Network

5.1.2.1.2 Proposed Scenario Model

To represent the proposed development at the FHF, the following changes were made to the model:

A) Developed Scenario Terrain Update and Proposed Building Enforcement

The FHF finished design surface was stamped onto the existing model terrain layers such as to reflect post-developed surface conditions. The 2d_code layer was also modified to represent the additional Unstuffing Shed building as well as changes to the existing Ocean View Shed building footprint that would be carried out as part of the proposed design. This updated building configuration can be seen in Figure 5-7.

B) Addition to 1d Network (Pits & Pipes)

Additional pits and pipes which form part of the design for the FHF, as shown in Figure 5-7 below.

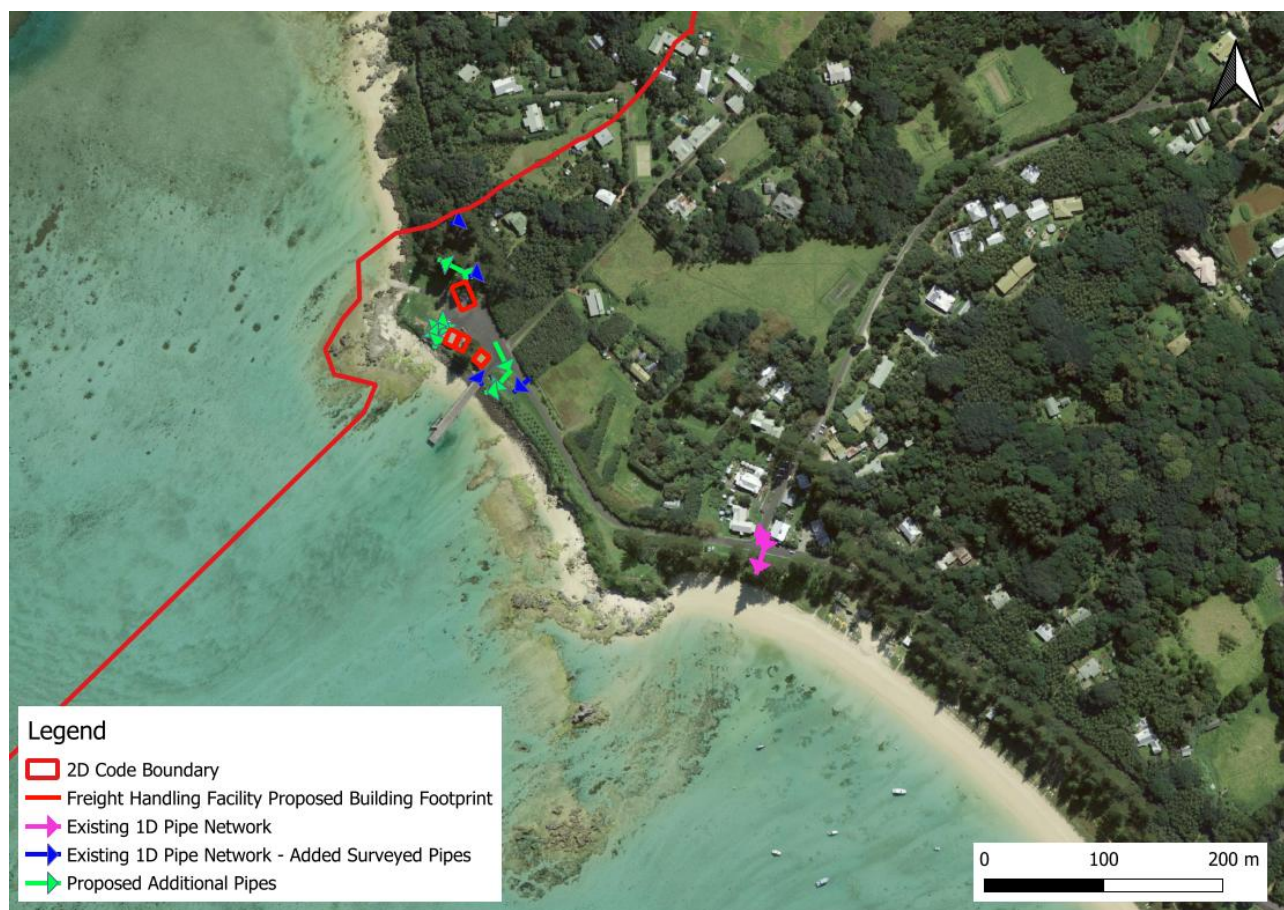


Figure 5-7: North Zone Model Updated Developed 1D Network

5.1.2.2 South Zone Model

5.1.2.2.1 Baseline Scenario Model (Existing Model)

The original South Zone Model was received and run for the 1% AEP design event. The results were then compared to the original flood result files to ensure the validity of the model before progressing to making any changes.

After the initial validation step, existing changes were made to landforms and land use such that the baseline existing model could be established. This became the baseline to which the flood results for the proposed scenario changes were compared to. Major updates to the baseline model included the following:

Existing Scenario Terrain Update

The Waste Management Facility project site was surveyed to attain the most up-to-date representation of current existing conditions. Existing buildings were also identified and represented using a 2d_code layer. This terrain modification was implemented for the baseline model.

Local Sub-Catchments Unaltered

The South Zone Model used a single 2d_sa polygon to represent inflows to the area including the WMF development area, as shown in Figure 5-8 below.

It was noted however that the WMF location was situated at a high point relative to the surrounding local terrain and taken together with the presence of existing visible flow paths around the Project site, it was determined that further sub-catchment delineation would not produce results that were significantly different to that of the original model. As such, sub-catchments remained unchanged from the original South Zone model.

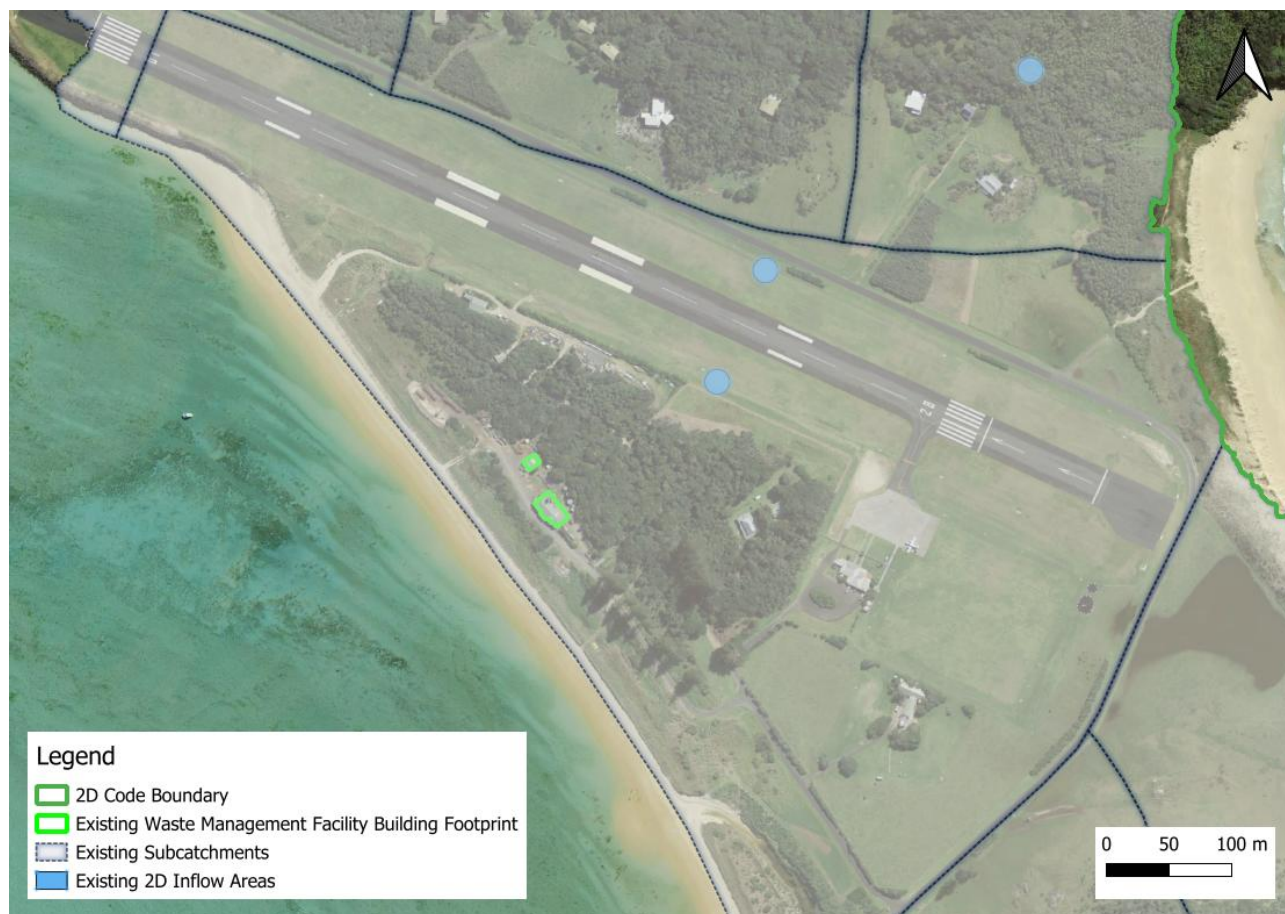


Figure 5-8: South Zone Model Existing Sub-Catchments

5.1.2.2.2 Proposed Scenario Model

The proposed development at the WMF location came with the following major changes to the TUFLOW model:

Developed Scenario Terrain Update and Proposed Building Enforcement

The WMF finished design surface was stamped onto the baseline model terrain layers such as to reflect post-developed surface conditions. The 2d_code layer representing the existing buildings were extended to include the proposed WMF, fuel bowser and dog kennels. This updated building configuration can be seen in Figure 5-9.

Addition to 1d Network (Pits & Pipes)

Additional pits and pipes were designed for the WMF location, as shown in Figure 5-9 below:

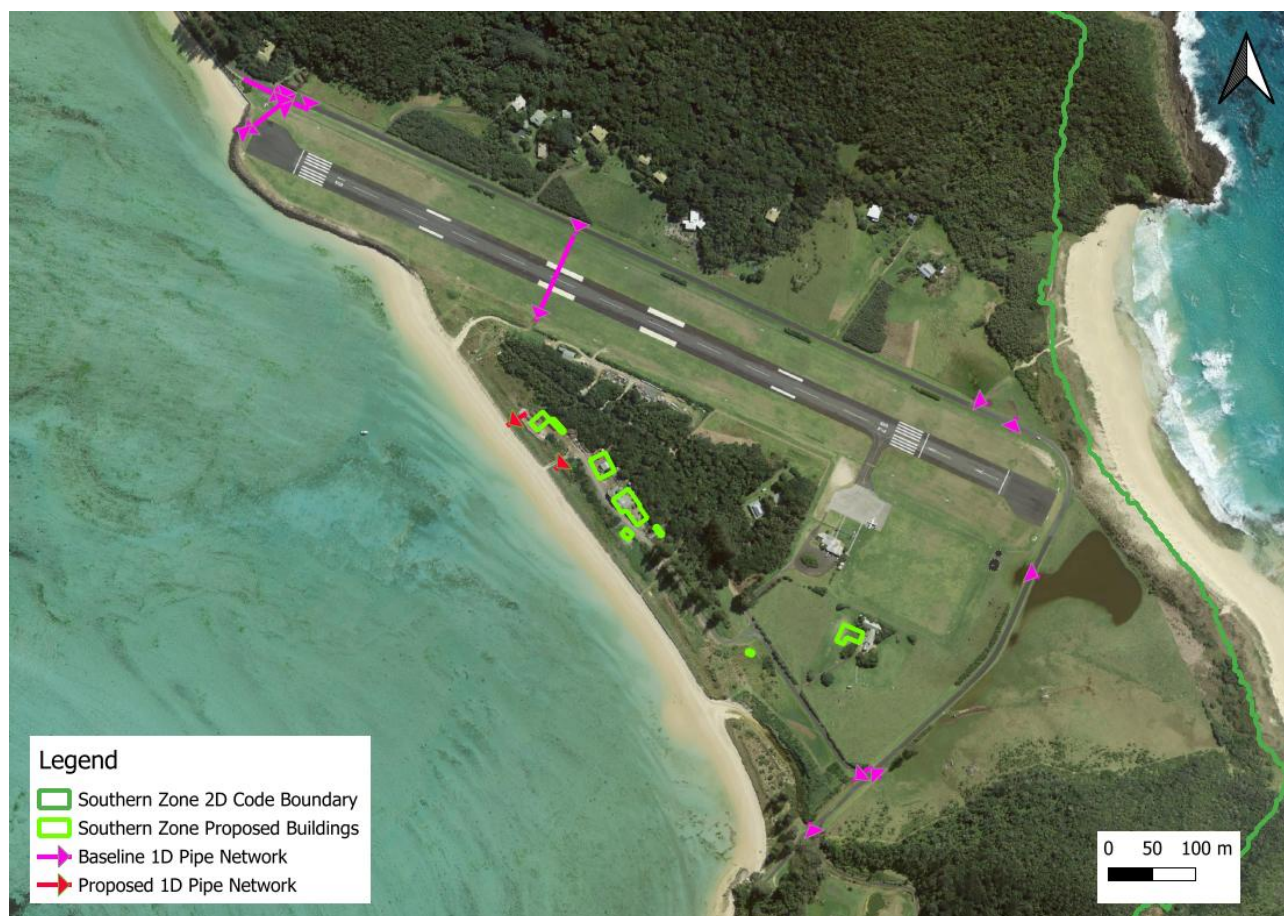


Figure 5-9: South Zone Model Updated Developed 1D Network

5.1.3 Design Storms

Both the North Zone and South Zone hydraulic models are influenced by design inflows and tailwater conditions driven by ocean levels. Model simulations were conducted for the 20% AEP, 5% AEP, 1% AEP, and Probable Maximum Flood (PMF) events, as well as under climate change scenarios as outlined in the Lord Howe Island Floodplain Management Plan (WMAwater, 2021).

Given the close proximity of the Project to the coast and relatively low elevations, flood behaviour can be driven by catchment (rainfall) processes or high tailwater (ocean) levels. Various combinations of rainfall intensities and ocean levels were assessed. The adopted design events are summarised in Table 5-2.

The critical storm durations and tailwater levels applied in this assessment were consistent with the Lord Howe Island Floodplain Management Plan (WMAwater, 2021). It is noted that the tidal levels obtained from the water level recorder operated by Manly Hydraulics Laboratory were calibrated to the Australian Height Datum 1971 (AHD71) datum.

Table 5-2: Adopted Flood Events

AEP (%)	Rainfall Dominated Cases		Ocean Dominated Cases	
	Rainfall	Ocean	Rainfall	Ocean
20	20% AEP Rainfall with 20% Ocean Level (1.74m AHD71 interpolated between 10% and 50% AEP levels)			
5	5% AEP	Mean High Water Spring 2.01 m AHD71	20% AEP	5% AEP 2.05 m AHD71

AEP (%)	Rainfall Dominated Cases		Ocean Dominated Cases	
	Rainfall	Ocean	Rainfall	Ocean
1	1% AEP	Mean High Water Spring 2.01 m AHD71	20% AEP	1% AEP 2.30 m AHD71
PMF	PMF	Mean High Water Spring 2.01 m AHD71	20% AEP	0.1% AEP 2.53 m AHD71

5.1.4 Flood Function

Flood Function (also referred to as ‘Hydraulic Categories’) refers to the classification of floodwaters into three categories: floodway/flow conveyance, flood storage and flood fringe. These categories help to describe the nature of flooding across the floodplain and aid planning when assessing developable areas. The definitions from the Floodplain Risk Management Manual 2023 are provided below, which haven’t changed significantly since the 2005 definitions:

- Floodway – Areas of the floodplain which generally convey a significant discharge of water during floods and are sensitive to changes that impact flow conveyance. They often align with naturally defined channels or form elsewhere in the floodplain.
- Flood storage – Areas of the floodplain that are outside floodway’s which generally provide for temporary storage of floodwaters during the passage of a flood and where flood behaviour is sensitive to changes that impact on temporary storage of water during a flood; and,
- Flood fringe – The part of the flood extents for the event remaining after the flood function areas of floodway and flood storage areas have been defined.

To maintain consistency with the established model, the methodology to define the hydraulic categories for the Project follows the approach defined by Howells et al. in their 2004 paper, with the definitions provided below:

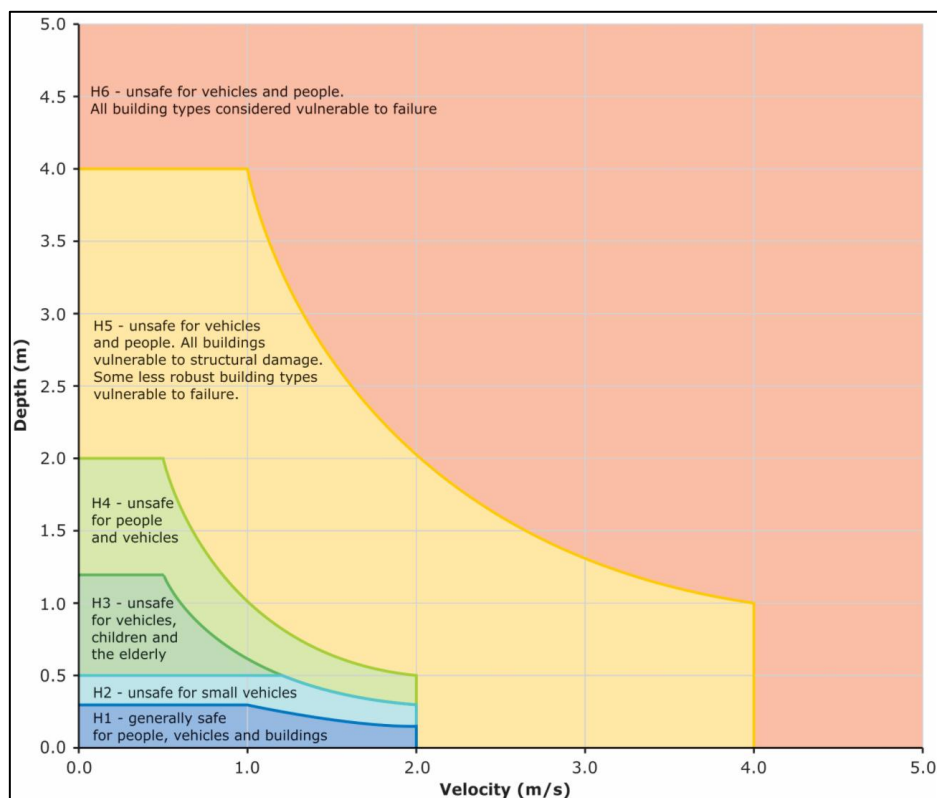
- Floodway: If either of the following criteria is met, then the area is classed as ‘floodway’
 - Velocity x Depth ≥ 0.08 AND Velocity > 0.045
 - Velocity > 0.14 AND Depth > 0.05
- Flood Storage: If neither of the above apply and Depth > 0.08 , then the area is classed as ‘Flood Storage’
- Flood Fringe: The remaining flood-affected extent.

5.1.5 Flood Hazard

Floods can be hazardous, producing harm to people, damage to infrastructure and potentially loss of life. In examining the potential hazard of flooding at the Project, there are several factors to be considered, as outlined in ARR 2019 (Book 6 Chapter 7). An assessment of flood hazard should consider:

- Velocity of floodwaters.
- Depth of floodwaters.
- Combination of velocity and depth of floodwaters.
- Isolation during a flood.
- Effective warning time.
- Rate of rise of floodwater.

The flood hazard of the Project was assessed in accordance with ARR2019, which defines six hazard categories. The combined flood hazard curves are presented in Figure 5-10, and vulnerability thresholds classifications summarised in Table 5-3.



* Categories H1 to H4 as outlined in ARR 2019 are equivalent to low hazard and H5 to H6 equivalent to high hazard in the 2005 Floodplain development manual (DIPNR 2005).

Figure 5-10: Flood Hazard Categories and Definitions (ARR, 2019)*

Table 5-3: Flood Hazard Categories

Hazard Vulnerability Classification	Classification Limit (D and V in combination)	Limiting Still Water Depth (m)	Limiting Velocity (m/s)	Description
H1	$D \cdot V \leq 0.3$	0.3	2.0	Generally safe for vehicles, people, and buildings.
H2	$D \cdot V \leq 0.6$	0.5	2.0	Unsafe for small vehicles.
H3	$D \cdot V \leq 0.6$	1.2	2.0	Unsafe for vehicles, children and the elderly.
H4	$D \cdot V \leq 1.0$	2.0	2.0	Unsafe for vehicles and people.
H5	$D \cdot V \leq 4.0$	4.0	4.0	Unsafe for vehicles and people. All buildings vulnerable to structural damage. Some less robust buildings subject to failure
H6	$D \cdot V > 4.0$	—	—	Unsafe for vehicles and people. All building types considered vulnerable to failure

5.1.6 Climate Change Considerations

The climate change conditions incorporated into the original South Zone and North Zone models were based on the 2005 Floodplain Development Manual, which required flood studies and floodplain risk management assessments to consider the impacts of sea level rise and increased rainfall on flood behaviour. The more

recent Flood Risk Management Manual (DPE, 2023) provides updated recommendations regarding approaches to climate change consideration.

However, both zones are located at elevations significantly higher than the 0.1% AEP Lagoon Tidal Level of 2.53 m AHD71 (refer to Table 5 of the Lord Howe Island Floodplain Management Plan, WMAwater, 2021), with ground levels exceeding 5 m AHD. Additionally, the WMF has not been impacted by flooding (see Section 6.1.2), and the impact on the FHF is minimal (see Section 6.1.1), with flood depths less than 10 mm for the 1% AEP event.

Consequently, the influence of updated climate change considerations is considered negligible, and the climate change assumptions applied in this assessment have been retained from previous studies, consistent with the methodology outlined in the Lord Howe Island Floodplain Management Plan (WMAwater, 2021).

The following variables were considered:

- Increase in peak rainfall and storm volume:
 - Low level rainfall increase of 10%
- Increase in sea level:
 - 0.4m increase by the year 2050
 - 0.9m increase by the year 2100

As the North Zone model has no direct outlet to the ocean and the berm is above 4 m AHD71, sea level rise was not assessed for this catchment.

The effect of these climate change parameters on the 1% AEP flood results can be seen in the relevant climate change map figures in Section 6.1.1 and Section 6.1.2.

6. Flood Model Results & Analysis

6.1 Baseline Conditions

Model results for Baseline Conditions have been mapped for the critical duration 20% AEP, 5% AEP, 1% AEP, 1% AEP + Climate Change and PMF design events.

6.1.1 North Zone Baseline Results

Baseline result maps for the North Zone model are included in **Appendix B** as follows:

- Figure B1.1: Baseline (Existing) Conditions, 20% AEP event, Depths and Levels
- Figure B1.2: Baseline (Existing) Conditions, 5% AEP event, Depths and Levels
- Figure B1.3: Baseline (Existing) Conditions, 1% AEP event, Depths and Levels
- Figure B1.4: Baseline (Existing) Conditions, 1% AEP + Climate Change event, Depths and Levels
- Figure B1.5: Baseline (Existing) Conditions, PMF event, Depths and Levels
- Figure B2.1: Baseline (Existing) Conditions, 20% AEP event, Velocity
- Figure B2.2: Baseline (Existing) Conditions, 5% AEP event, Velocity
- Figure B2.3: Baseline (Existing) Conditions, 1% AEP event, Velocity
- Figure B2.4: Baseline (Existing) Conditions, 1% AEP + Climate Change event, Velocity
- Figure B2.5: Baseline (Existing) Conditions, PMF event, Velocity
- Figure B3.1: Baseline (Existing) Conditions, 20% AEP event, Flood Hazard
- Figure B3.2: Baseline (Existing) Conditions, 5% AEP event, Flood Hazard
- Figure B3.3: Baseline (Existing) Conditions, 1% AEP event, Flood Hazard
- Figure B3.4: Baseline (Existing) Conditions, 1% AEP + Climate Change event, Flood Hazard
- Figure B3.5: Baseline (Existing) Conditions, PMF event, Flood Hazard
- Figure B4.1: Baseline (Existing) Conditions, 1% AEP event, Flood Function

Key observations from the baseline conditions flood maps for the North Zone are:

- Flooding for the North Zone was negligible for all events up to and including the PMF event. Depths are limited to less than 20mm across the zone.
- Given the negligible flooding, velocities adjacent to existing buildings are not of significant importance and are less than 1m/s even in the PMF event.
- Corresponding with the negligible flooding, ZAEM1 hazard is generally H1 across the site.
- The existing buildings remain within the Flood Fringe in the 1% AEP event.
- The effect of climate change on the 1% AEP flows was not significant, resulting in no noteworthy change to flood depths, velocities or hazards across the North Zone.

6.1.2 South Zone Baseline Results

Baseline result maps for the North Zone model are included in **Appendix E** as follows:

- Figure E1.1: Baseline Conditions, 20% AEP event, Depths and Levels
- Figure E1.2: Baseline (Existing) Conditions, 5% AEP event, Depths and Levels
- Figure E1.3: Baseline (Existing) Conditions, 1% AEP event, Depths and Levels
- Figure E1.4: Baseline (Existing) Conditions, 1% AEP + Climate Change event, Depths and Levels
- Figure E1.5: Baseline (Existing) Conditions, PMF event, Depths and Levels
- Figure E2.1: Baseline (Existing) Conditions, 20% AEP event, Velocity
- Figure E2.2: Baseline (Existing) Conditions, 5% AEP event, Velocity
- Figure E2.3: Baseline (Existing) Conditions, 1% AEP event, Velocity
- Figure E2.4: Baseline (Existing) Conditions, 1% AEP + Climate Change event, Velocity
- Figure E2.5: Baseline (Existing) Conditions, PMF event, Velocity
- Figure E3.1: Baseline (Existing) Conditions, 20% AEP event, Flood Hazard
- Figure E3.2: Baseline (Existing) Conditions, 5% AEP event, Flood Hazard
- Figure E3.3: Baseline (Existing) Conditions, 1% AEP event, Flood Hazard
- Figure E3.4: Baseline (Existing) Conditions, 1% AEP + Climate Change event, Flood Hazard
- Figure E3.5: Baseline (Existing) Conditions, PMF event, Flood Hazard
- Figure E4.1: Baseline (Existing) Conditions, 1% AEP event, Flood Function

Key observations from the baseline conditions flood maps for the South Zone are:

- There is no flooding at the existing waste management facility (also the location of the proposed WMF) and proposed fuel bowser location for all events up to and including the PMF event.
- The proposed dog kennel area experiences the following flooding characteristics:
 - Flood depths in the 1% AEP event are negligible (<20mm) (see Appendix H for further plan details).
 - In the PMF event:
 - flood depths are approximately 0.4m across the kennels, with the south-eastern corner experiencing depths up to 0.5m.
 - Flood velocities are less than 0.3m/s.
 - ZAEM1 Flood Hazard is H2 in the PMF.
 - The effect of climate change on the 1% AEP flood behaviour was insignificant.

6.2 Developed Conditions

Model results from the Developed Conditions for the North Zone have been mapped for the critical duration of 20% AEP, 5% AEP, 1% AEP, 1% AEP + Climate Change and PMF.

6.2.1 North Zone Results

Baseline result maps for the North Zone model are included in **Appendix C** as follows:

- Figure C1.1: Developed Conditions, 20% AEP event, Depths and Levels
- Figure C1.2: Developed Conditions, 5% AEP event, Depths and Levels
- Figure C1.3: Developed Conditions, 1% AEP event, Depths and Levels

- Figure C1.4: Developed Conditions, 1% AEP + Climate Change event, Depths and Levels
- Figure C1.5: Developed Conditions, PMF event, Depths and Levels
- Figure C2.1: Developed Conditions, 20% AEP event, Velocity
- Figure C2.2: Developed Conditions, 5% AEP event, Velocity
- Figure C2.3: Developed Conditions, 1% AEP event, Velocity
- Figure C2.4: Developed Conditions, 1% AEP + Climate Change event, Velocity
- Figure C2.5: Developed Conditions, PMF event, Velocity
- Figure C3.1: Developed Conditions, 20% AEP event, Flood Hazard
- Figure C3.2: Developed Conditions, 5% AEP event, Flood Hazard
- Figure C3.3: Developed Conditions, 1% AEP event, Flood Hazard
- Figure C3.4: Developed Conditions, 1% AEP + Climate Change event, Flood Hazard
- Figure C3.5: Developed Conditions, PMF event, Flood Hazard
- Figure C4.1: Developed Conditions, 1% AEP event, Flood Function

Key observations from the developed conditions flood maps for the North Zone are:

- Flood behaviour in the developed scenario was largely consistent with baseline conditions, with flooding remaining negligible across the North Zone in all events up to and including the PMF event.
- The new proposed Unstuffing Shed intercepts a minor local overland flow-path and modelling shows some localised ponding on its north side.
- The effect of climate change on the 1% AEP flows was insignificant, resulting in no noteworthy change to flood behaviour across the North Zone.

6.2.2 South Zone Results

Baseline result maps for the North Zone model are included in **Appendix F** as follows:

- Figure F1.1: Developed Conditions, 20% AEP event, Depths and Levels
- Figure F1.2: Developed Conditions, 5% AEP event, Depths and Levels
- Figure F1.3: Developed Conditions, 1% AEP event, Depths and Levels
- Figure F1.4: Developed Conditions, 1% AEP + Climate Change event, Depths and Levels
- Figure F1.5: Developed Conditions, PMF event, Depths and Levels
- Figure F2.1: Developed Conditions, 20% AEP event, Velocity
- Figure F2.2: Developed Conditions, 5% AEP event, Velocity
- Figure F2.3: Developed Conditions, 1% AEP event, Velocity
- Figure F2.4: Developed Conditions, 1% AEP + Climate Change event, Velocity
- Figure F2.5: Developed Conditions, PMF event, Velocity
- Figure F3.1: Developed Conditions, 20% AEP event, Flood Hazard
- Figure F3.2: Developed Conditions, 5% AEP event, Flood Hazard
- Figure F3.3: Developed Conditions, 1% AEP event, Flood Hazard
- Figure F3.4: Developed Conditions, 1% AEP + Climate Change event, Flood Hazard
- Figure F3.5: Developed Conditions, PMF event, Flood Hazard
- Figure F4.1: Developed Conditions, 1% AEP event, Flood Function

Key observations from the developed conditions flood maps for the South Zone are:

- Flooding at the proposed WMF and proposed fuel bowser location does not occur in the developed scenario, with both sites being flood immune in all events up to and including the PMF event.
- The proposed dog kennel area experiences the following flooding characteristics in the developed scenario:
 - Flood depths in the 1% AEP event are negligible (<20mm) (see Appendix H for further plan details).
 - In the PMF event:
 - flood depths are approximately 0.4m across the South Zone, with the south-eastern corner experiencing depths up to 0.5m.
 - Flood velocities are less than 0.3m/s.
 - ZAEM1 Flood Hazard is H2 in the PMF.
 - The effect of climate change on the 1% AEP flood behaviour was insignificant.

Given that flood depths in the 1% AEP event are negligible, it is considered standard drainage and stormwater management measures should be sufficient to manage any flows around the South Zone.

7. Impact Assessment

This chapter provides an assessment of the flood risk to the FHF (North Zone) and WMF (South Zone) and the potential impacts on flood behaviour during operation if mitigation measures were not incorporated into the design. Potential impacts associated with future climate change under operational conditions are also considered.

7.1 North Zone

Impact difference maps between the developed model (see Section 6.2.1) and the baseline model (see Section 6.1.1) have been mapped and presented for the 20% AEP, 5% AEP, 1% AEP, 1% AEP + Climate Change and PMF events.

These maps are shown in **Appendix D**.

- Figure D1.1: Impact Difference, 20% AEP event, Depths and Levels
- Figure D1.2: Impact Difference, 5% AEP event, Depths and Levels
- Figure D1.3: Impact Difference, 1% AEP event, Depths and Levels
- Figure D1.4: Impact Difference, 1% AEP + Climate Change event, Depths and Levels
- Figure D1.5: Impact Difference, PMF event, Depths and Levels

The observed impact remains localised and does not extend beyond the defined Project area.

7.1.1 Construction and Operational Activities

There is no afflux outside of the Project area, and as such no impact. Within the construction disturbance area footprint (shown in Figure 2-1) only the small, localised areas upstream of the new Unstuffing Shed and adjacent to the altered Ocean View Shed see positive afflux. Flood Hazard is low throughout the larger disturbance area and does not exceed H1 in most locations including for the PMF event.

The same conclusions reached in Section 7.1.1 can also be applied to this section.

7.2 South Zone

Impact difference maps between the developed model (see Section 6.2.2) and the baseline model (see Section 6.1.2) have been mapped and presented for the 20% AEP, 5% AEP, 1% AEP, 1% AEP + Climate Change and PMF events.

These maps are shown in **Appendix G**.

- Figure G1.1: Impact Difference, 20% AEP event, Depths and Levels
- Figure G1.2: Impact Difference, 5% AEP event, Depths and Levels
- Figure G1.3: Impact Difference, 1% AEP event, Depths and Levels
- Figure G1.4: Impact Difference, 1% AEP + Climate Change event, Depths and Levels
- Figure G1.5: Impact Difference, PMF event, Depths and Levels

The observed impact remains localised and does not extend beyond the defined project area.

7.2.1 Construction and Operational Activities

There is no afflux outside of the Project area, and as such no impact in both the construction and operational phases.

Within the construction disturbance area footprint (shown in Figure 2-2) there is no positive afflux, and as such no impact to the Project due to the development. Flood Hazard can reach H3 within the bounds of the disturbance

area during both the 1% AEP and PMF events, especially on the eastern side of the existing weather station shed. Care should be taken during construction to avoid these areas where possible. The proposed dog kennel footprint itself only sees H1 hazard levels in the 1% AEP event and H2 in the PMF event. No hazard is recorded at all for the proposed WMF and fuel bowser locations throughout all events.

8. Flood Emergency Response Plan

Reference is made to the Lord Howe Island Local Tsunami Plan, a sub-plan of the Lord Howe Island Local Emergency Plan (EMPLAN) prepared by the NSW State Emergency Service (2020).

The north portion of the Project area lies within Sector B – Hall to Old Settlement, where Ocean View Lodge (Old Met site) is designated as an evacuation assembly point. The south portion falls within Sector I – Airport Strip (as shown in Appendix G), where evacuation is directed south along Lagoon Road to the Golf Club, which also serves as an evacuation assembly point.

As there are no impacts beyond the Project area for the North Zone and given that most of the area is subject only to Hazard Level H1 even under a Probable Maximum Flood (PMF) scenario, the proposed design does not alter or affect the current emergency management arrangements.

Similarly for the South Zone, there are no impacts beyond the Project area. The dog kennels are the only development component affected and this is only in the PMF event, where Hazard Level H2 is experienced. With current design floor levels, the building would experience 0.215m of flood depth in the PMF. Given the kennels are not isolated in the PMF event and the duration of flooding is short, ‘shelter in place’ is a suitable emergency response option. Alternatively, evacuation to the flood immune WMF site via local access paths is also a viable option.

9. Avoidance and Mitigation Measures

9.1 Avoidance Measures

There is no significant flooding across both the North and South Zones in all events up to and including the 1% AEP event. No avoidance measures have been proposed.

9.2 Mitigation measures

9.2.1 Management of construction impacts

There is no significant flooding across both the North and South Zones in all events up to and including the 1% AEP event. Refer to 'Technical Paper - Water - Hydrology and Quality' for details of typical stormwater management/mitigation and erosion and sediment control measures.

9.2.2 Management of operational impacts

There is no significant flooding across both the North and South Zones in all events up to and including the 1% AEP event. Refer to 'Technical Paper - Water - Hydrology and Quality' for details of typical stormwater management/mitigation measures required to manage local overland flows.

10. Conclusion

This report summarises the outcomes of the Flood Risk Assessment Technical Paper prepared to assess the potential impacts of the Project in accordance with the SEARs.

Potential impacts were assessed for proposed facilities in the North and South Zones which include a Freight Handling Facility (FHF) in the north, and Waste Management Facility (WMF), fuel bowser and dog kennels in the south.

This assessment was completed by updating flood models prepared to inform the Lord Howe Island Floodplain Management Plan (WMAwater, 2021). Baseline and proposed development flood conditions were assessed for the 20% AEP, 5% AEP, 1% AEP, 1% AEP + Climate Change and PMF events.

For the North Zone, the modelling results indicate that it experiences negligible flooding up to and including the PMF event. It was noted that the proposed Unstuffing Shed resulted in localised ponding on its northern-eastern face. Implementation of typical stormwater management measures would be sufficient to manage this. No flood impacts were noted outside the Project boundary.

For the South Zone, the modelling results indicate that the proposed WMF and fuel bowser sites are flood immune up to and including the PMF event. The dog kennel site experiences negligible flooding in all events up to and including the 1% AEP event. Flood depths during the PMF event were up to 0.5m. 'Shelter in Place' is considered a viable emergency strategy with the current design floor levels or alternatively evacuation to the WMF facility. No flood impacts were noted outside the Project boundary.

Appendix A

North Model Baseline Flood Mapping

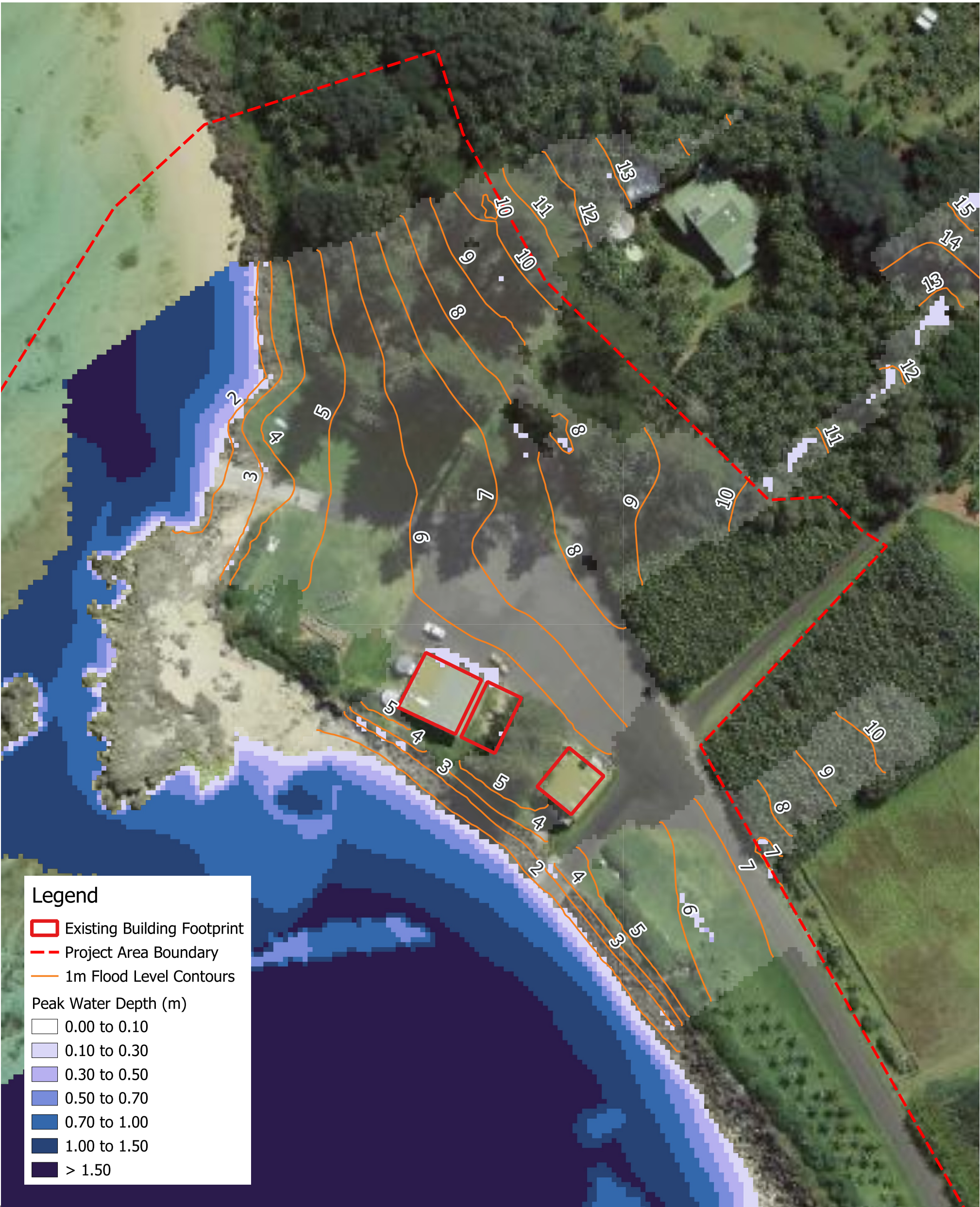
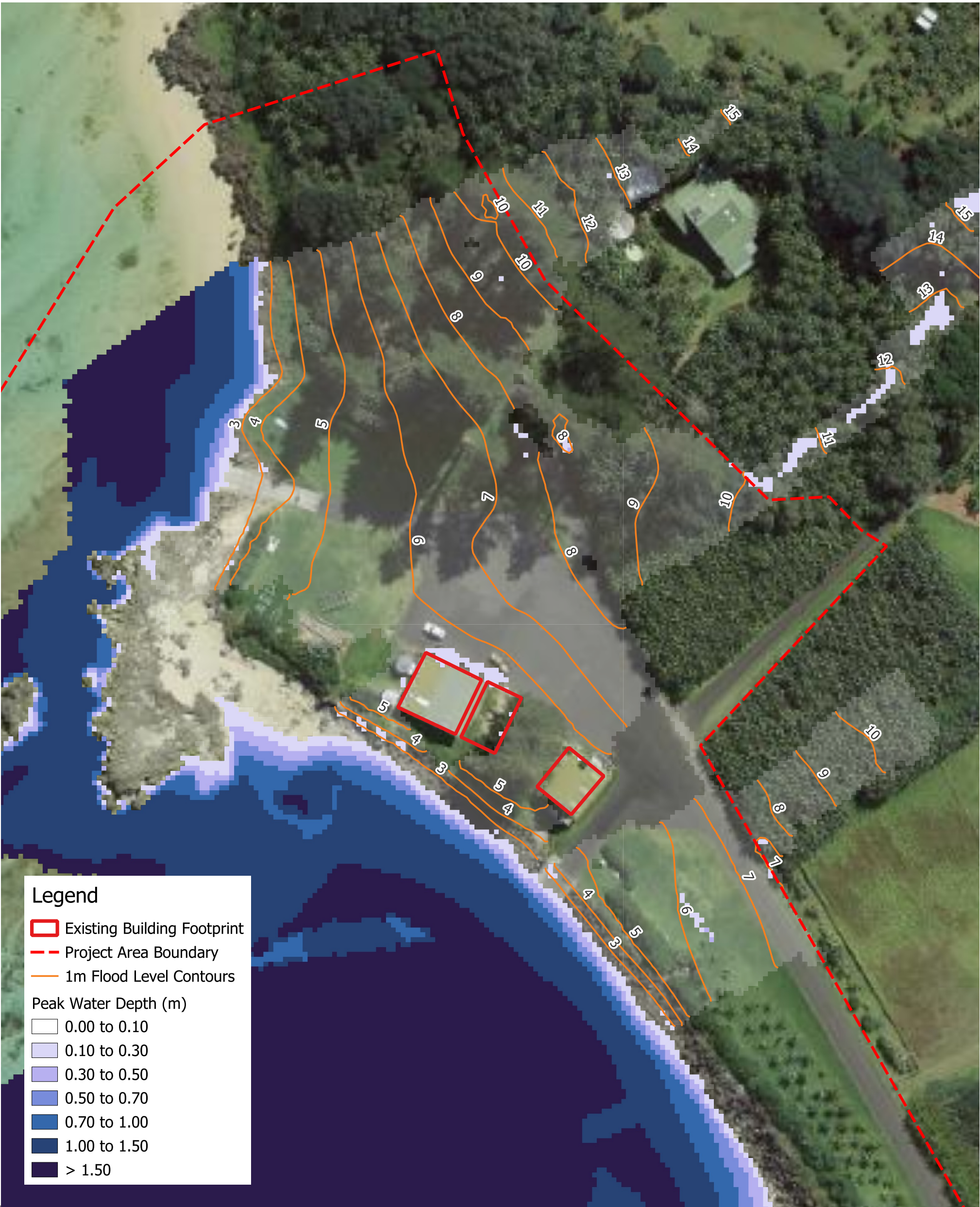


FIGURE TITLE		Peak Water Depth - 20% AEP Design Flood - Existing Scenario	DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149	
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CREATED BY		M. PERERA	SOURCES		ESRI (PROJ: GDA1994 MGA Zone 57)	01020304050 m  PAGE SIZEA3



Legend

Existing Building Footprint

Project Area Boundary

1m Flood Level Contours

Peak Water Depth (m)

0.00 to 0.10

0.10 to 0.30

0.30 to 0.50

0.50 to 0.70

0.70 to 1.00

1.00 to 1.50

> 1.50

FIGURE TITLE		Peak Water Depth - 5% AEP Design Flood - Existing Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
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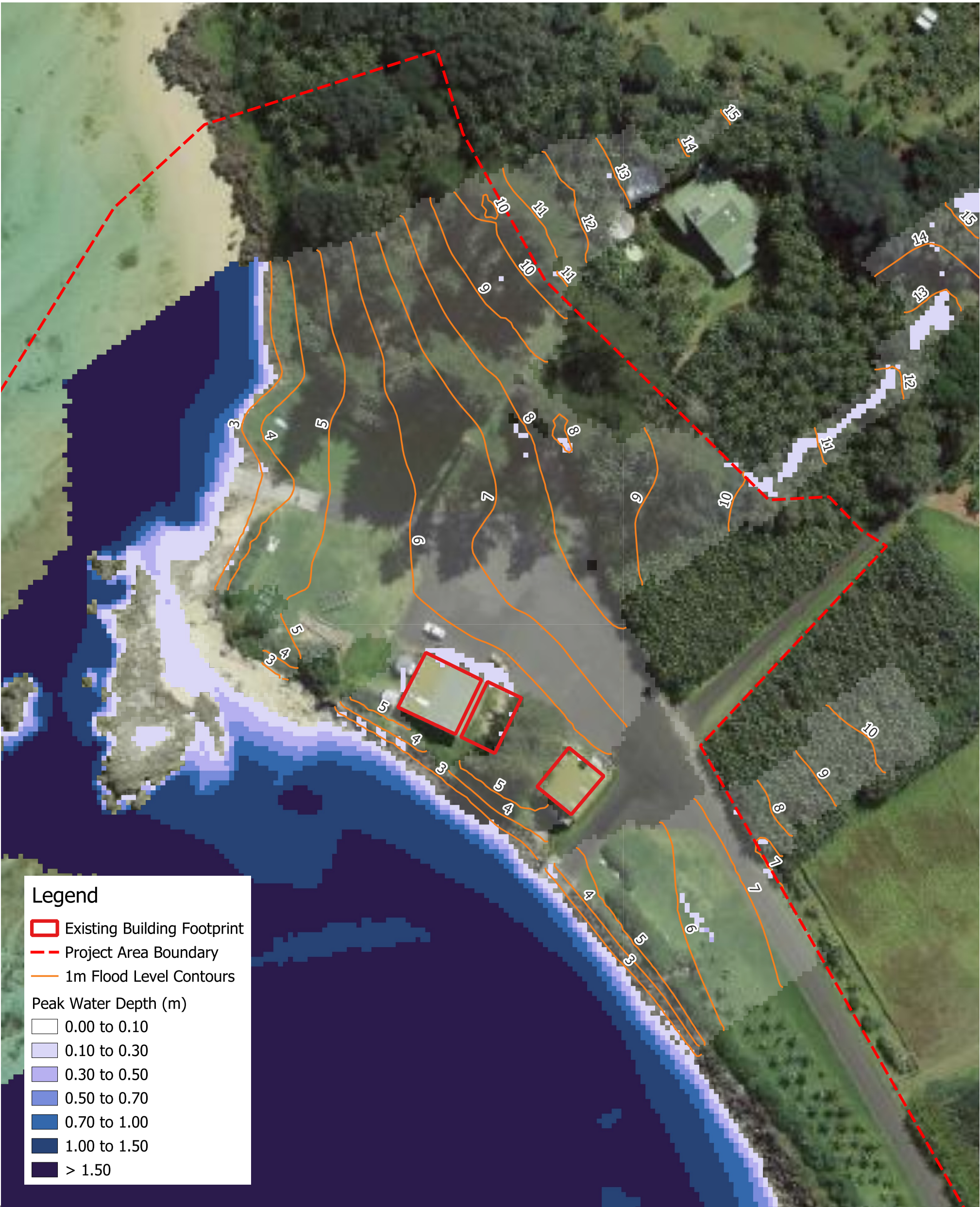


FIGURE TITLE		Peak Water Depth - 1% AEP Design Flood - Existing Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
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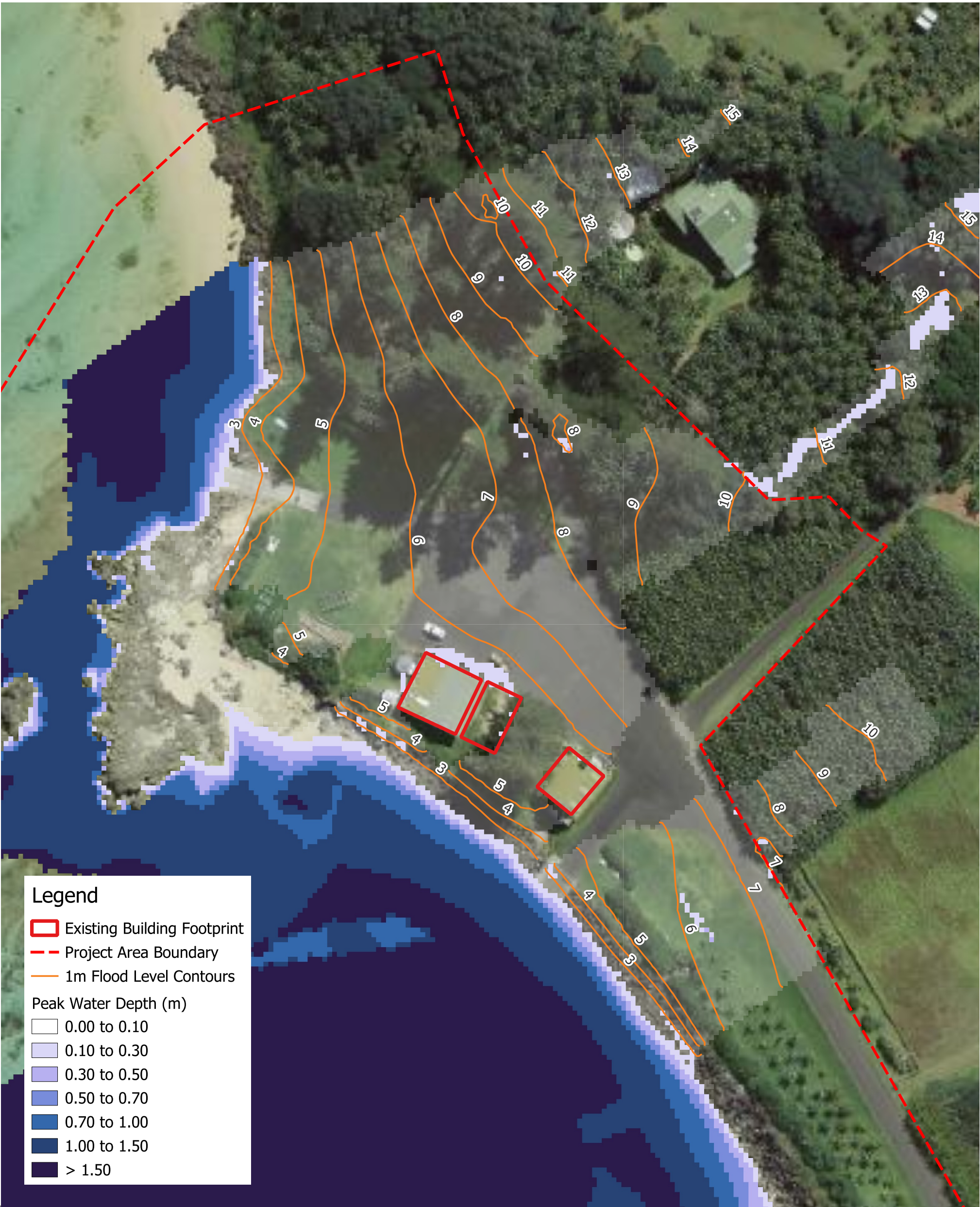


FIGURE TITLE		Peak Water Depth - 1 + Climate Change% AEP		DATE	10-09-2025		© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document. SMEC AUSTRALIA PTY LTD ABN 47 065 475 149		
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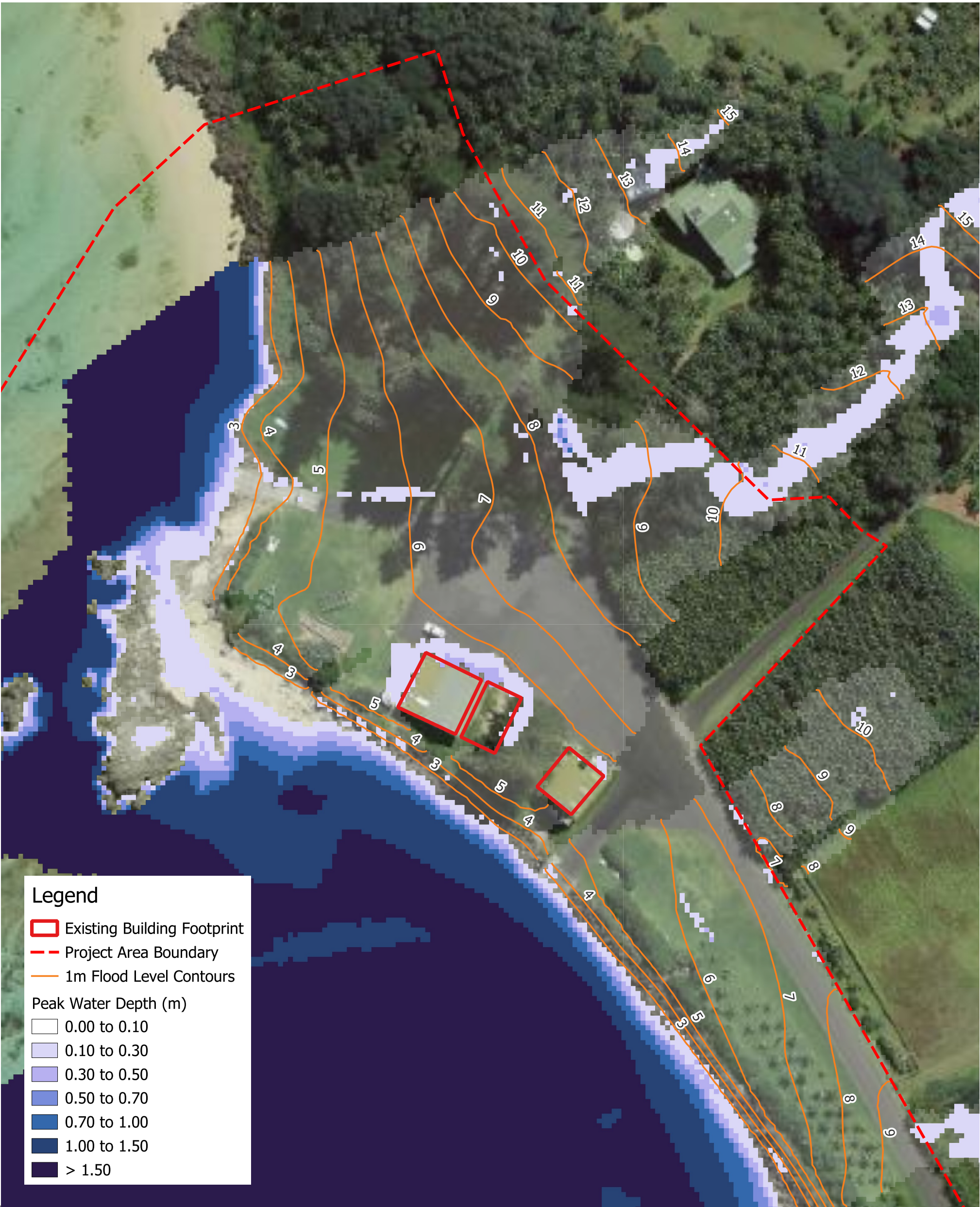
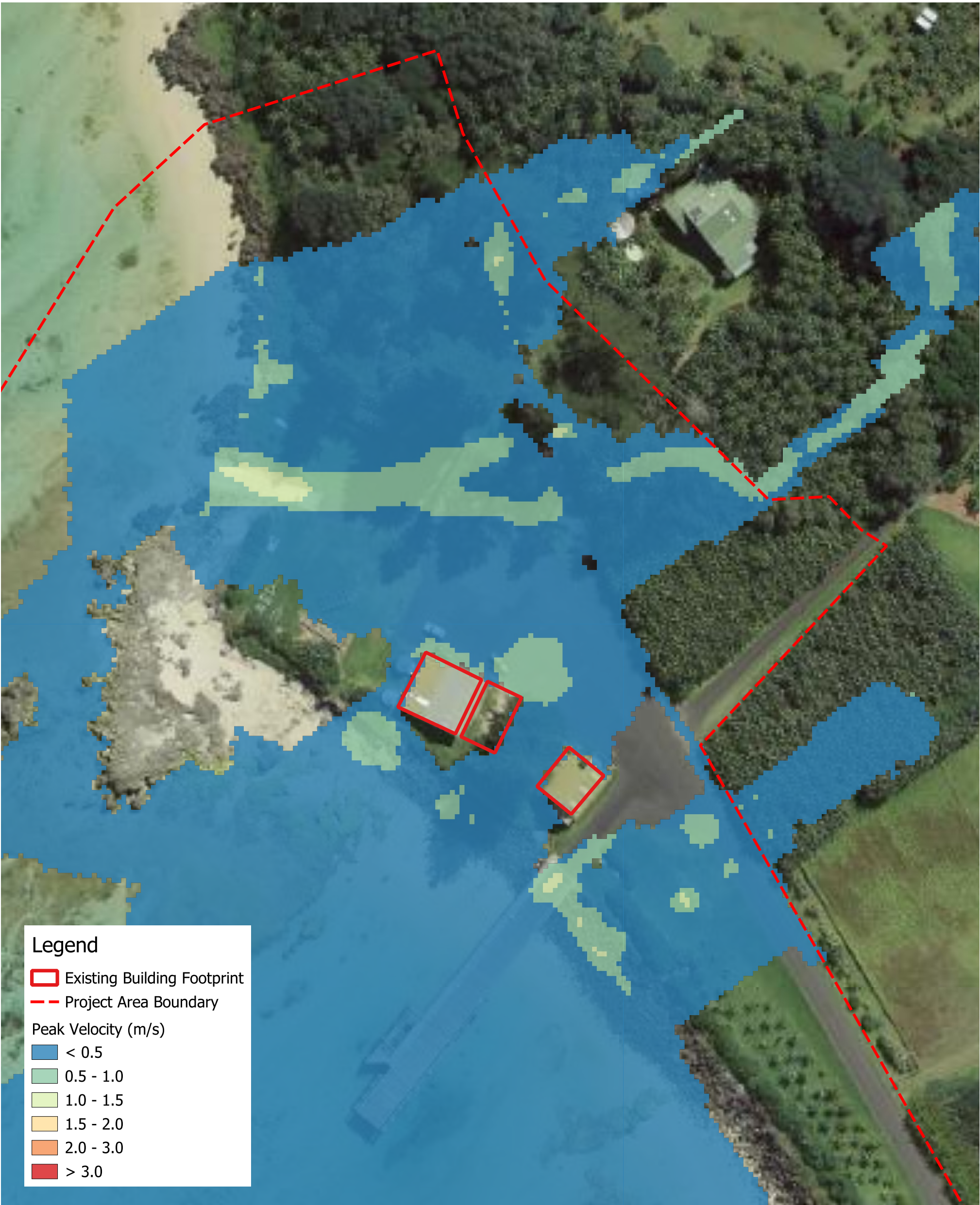


FIGURE TITLE		Peak Water Depth - PMF% AEP Design Flood - Existing Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
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CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m  PAGE SIZE A3



Legend

Existing Building Footprint

Project Area Boundary

Peak Velocity (m/s)

< 0.5

0.5 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 3.0

> 3.0

FIGURE TITLE	Peak Velocity - 20% AEP Design Flood - Existing Scenario	DATE	10-09-2025
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PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program
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smec

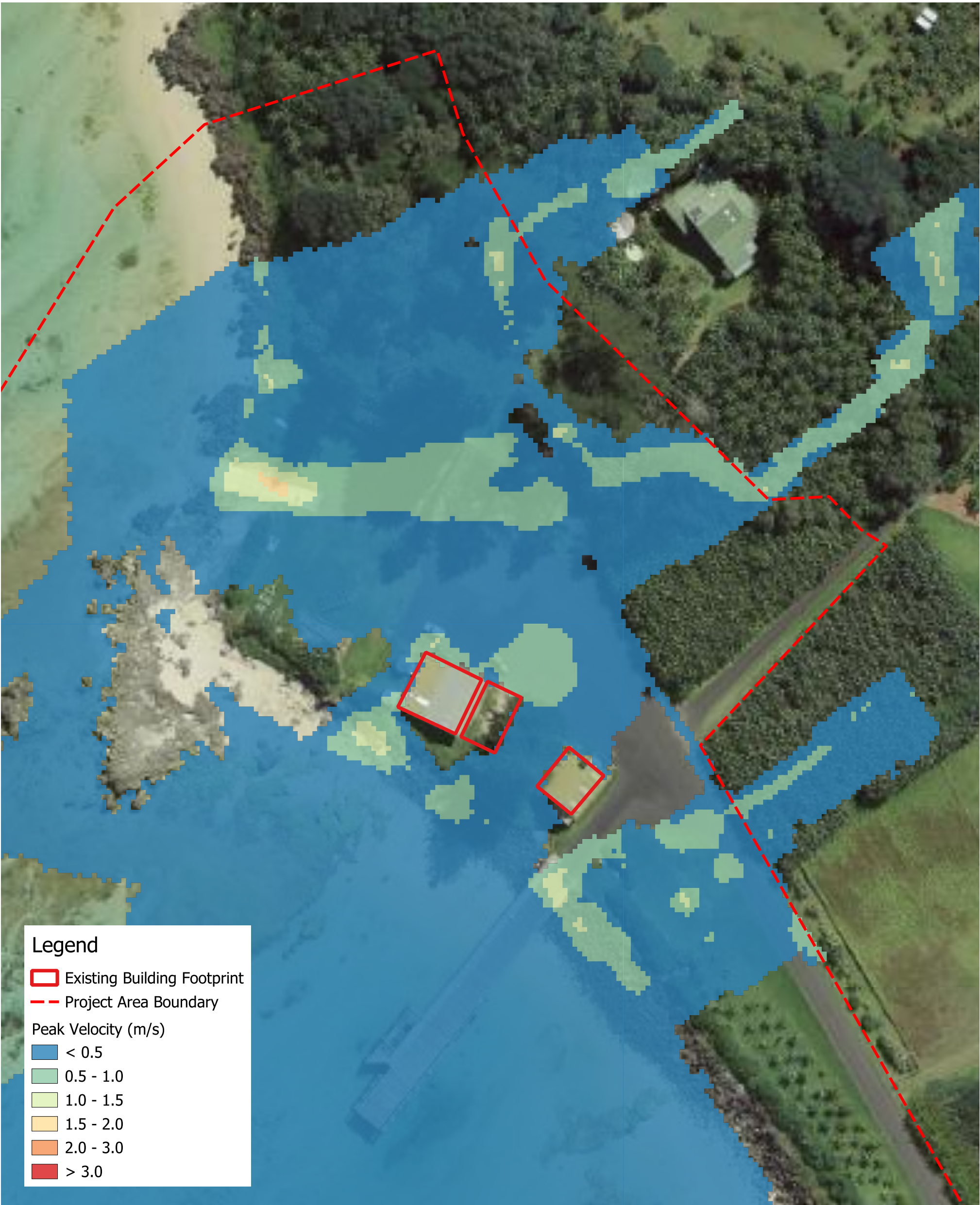
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Legend

Existing Building Footprint

Project Area Boundary

Peak Velocity (m/s)

< 0.5

0.5 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 3.0

> 3.0

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CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)

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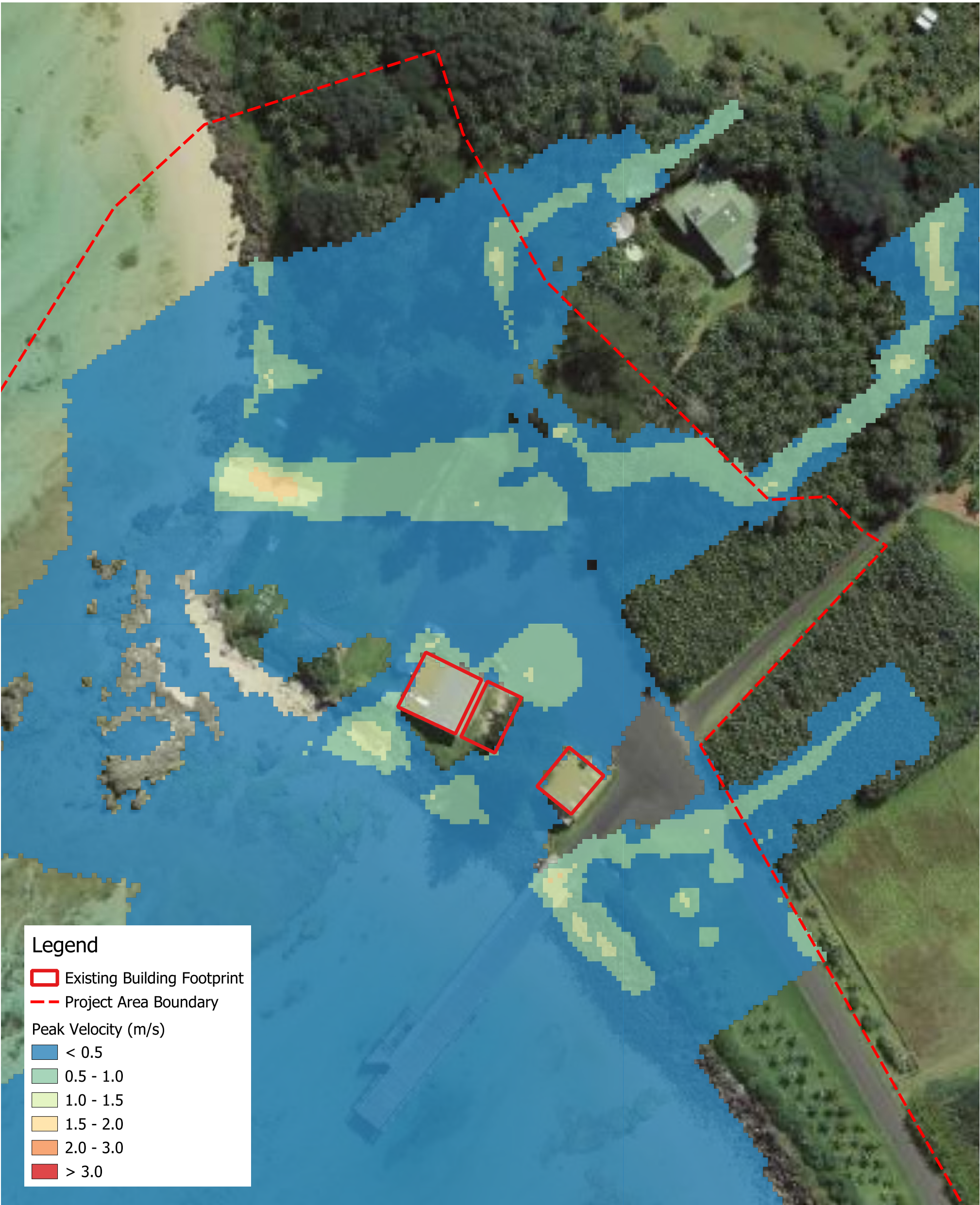
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Legend

Existing Building Footprint

Project Area Boundary

Peak Velocity (m/s)

< 0.5

0.5 - 1.0

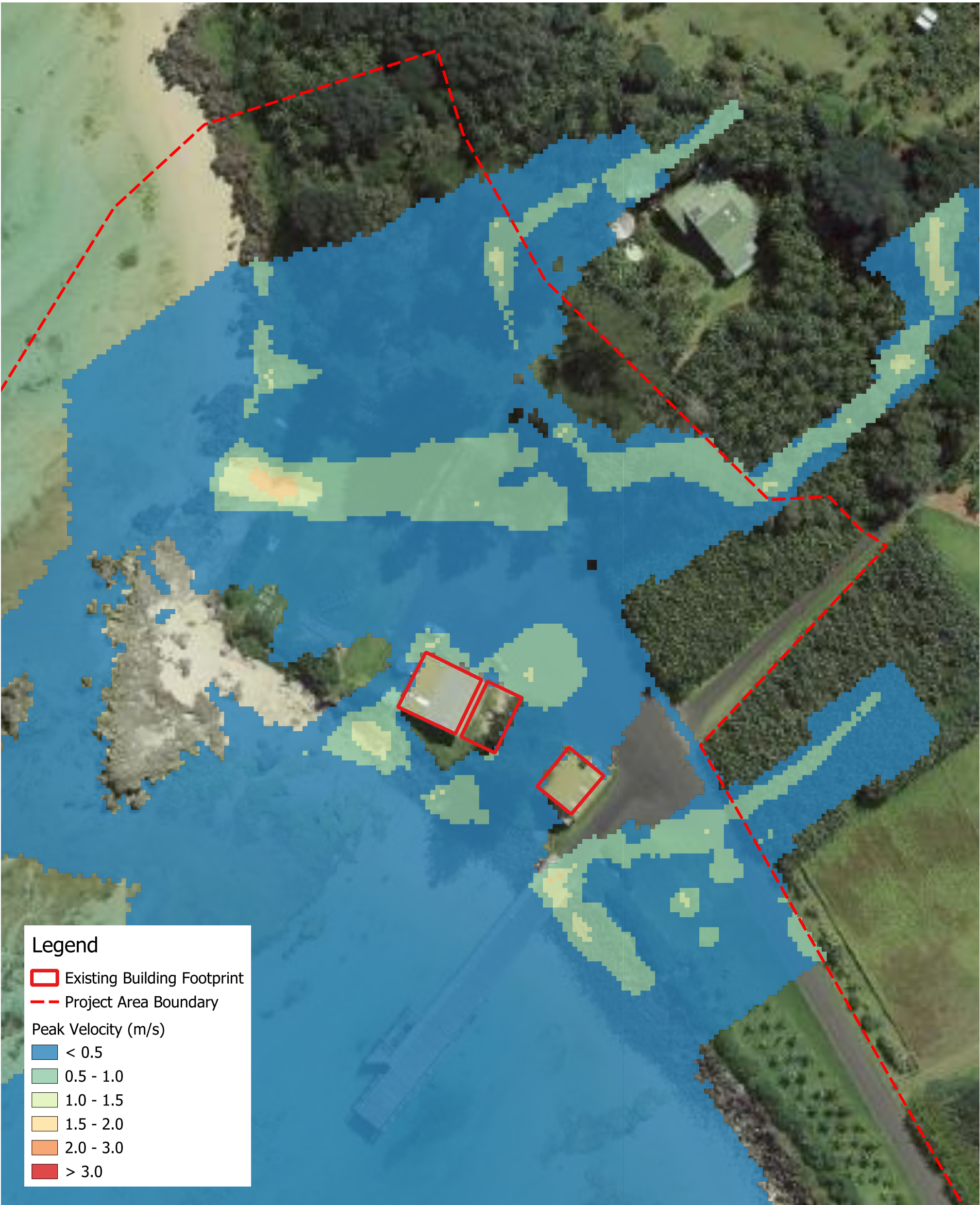
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1.5 - 2.0

2.0 - 3.0

> 3.0

FIGURE TITLE		Peak Velocity - 1% AEP Design Flood - Existing Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
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CREATED BY		M. PERERA	SOURCES		ESRI (PROJ: GDA1994 MGA Zone 57)	01020304050 m  PAGE SIZEA3



Legend

Existing Building Footprint

Project Area Boundary

Peak Velocity (m/s)

< 0.5

0.5 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 3.0

> 3.0

FIGURE TITLE	Peak Velocity - 1 + Climate Change% AEP Design Flood - Existing Scenario	DATE	10-09-2025
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PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)

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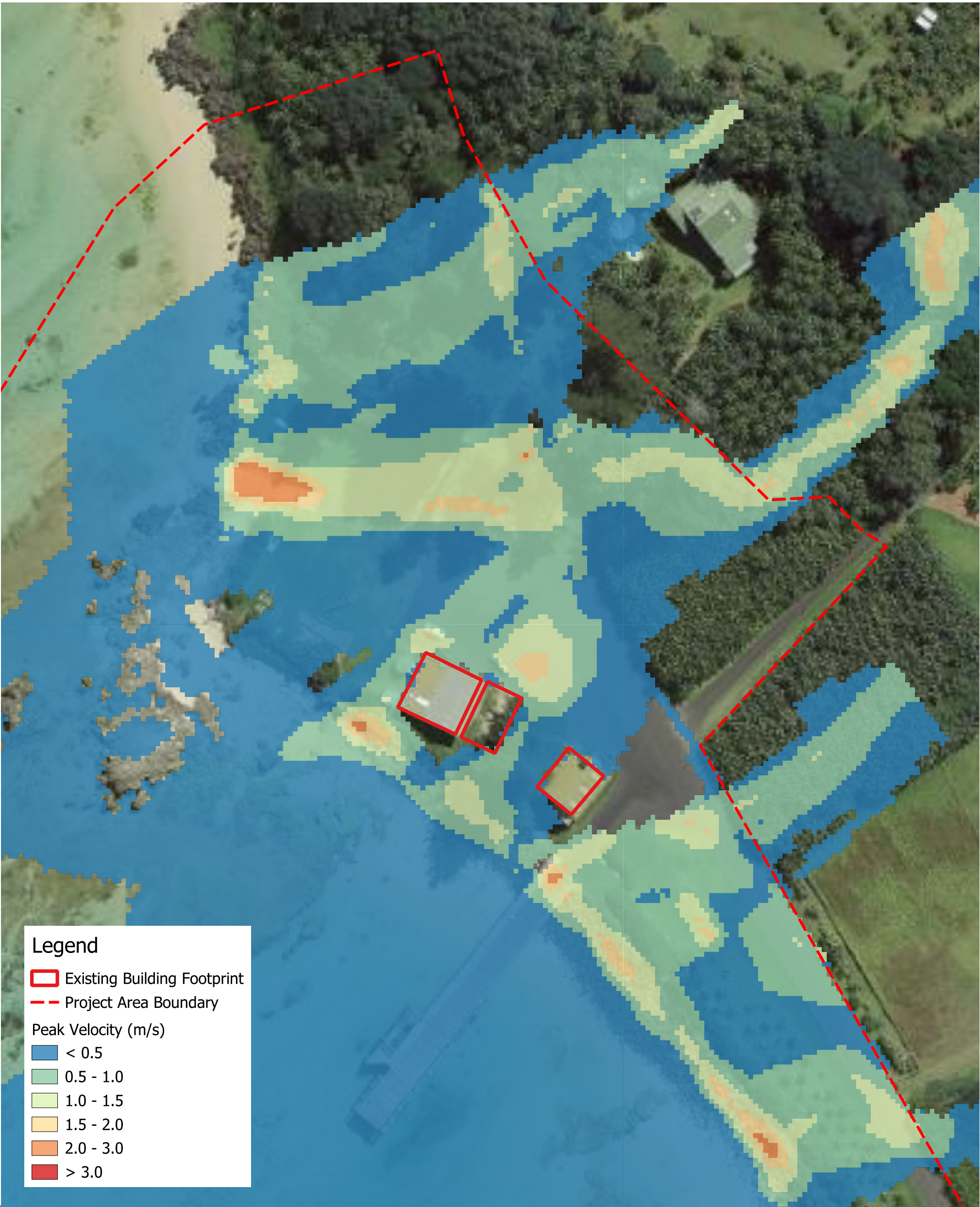
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Legend

Existing Building Footprint

Project Area Boundary

Peak Velocity (m/s)

< 0.5

0.5 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 3.0

> 3.0

FIGURE TITLE	Peak Velocity - PMF% AEP Design Flood - Existing Scenario		DATE	10-09-2025
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PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program	
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)	

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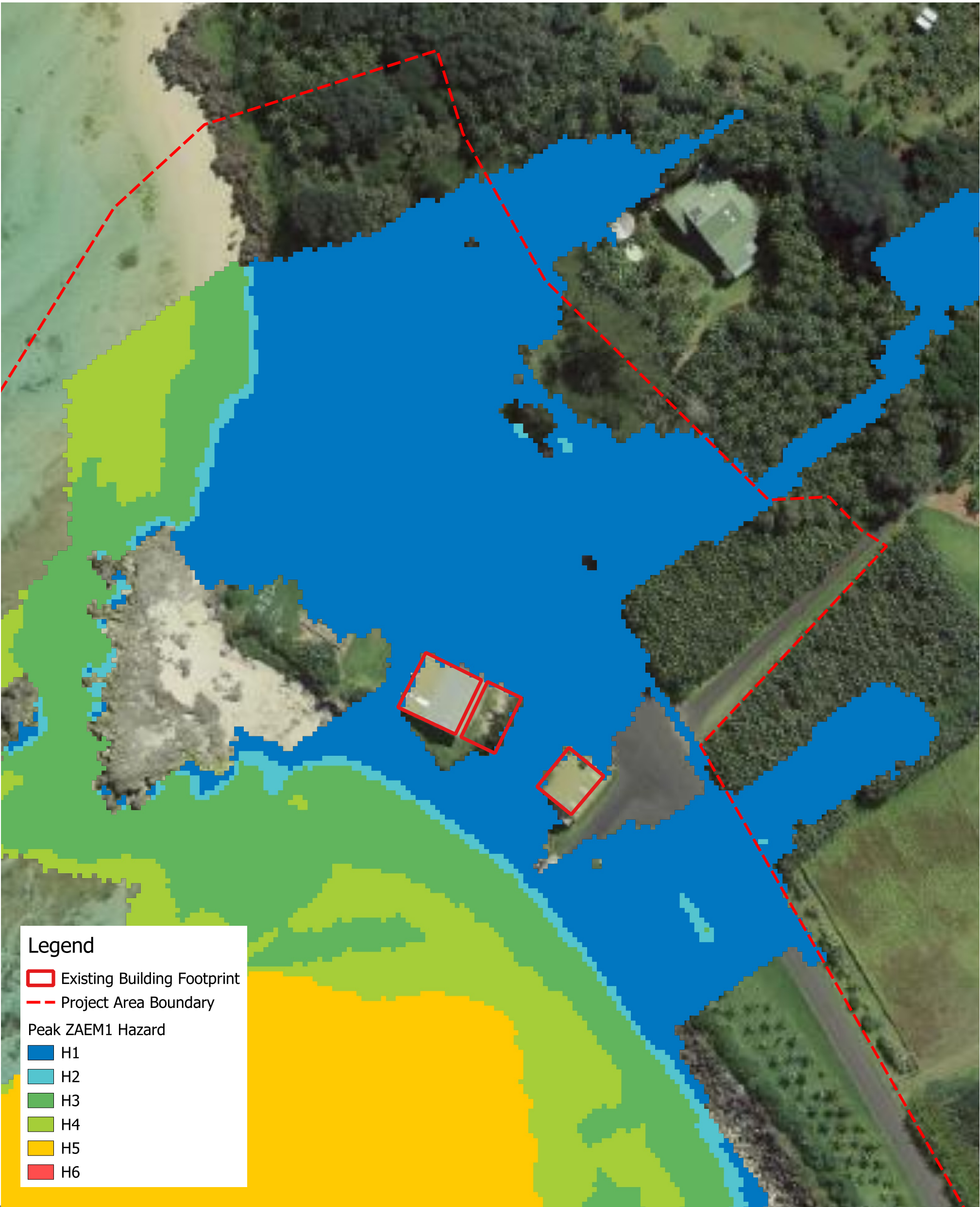
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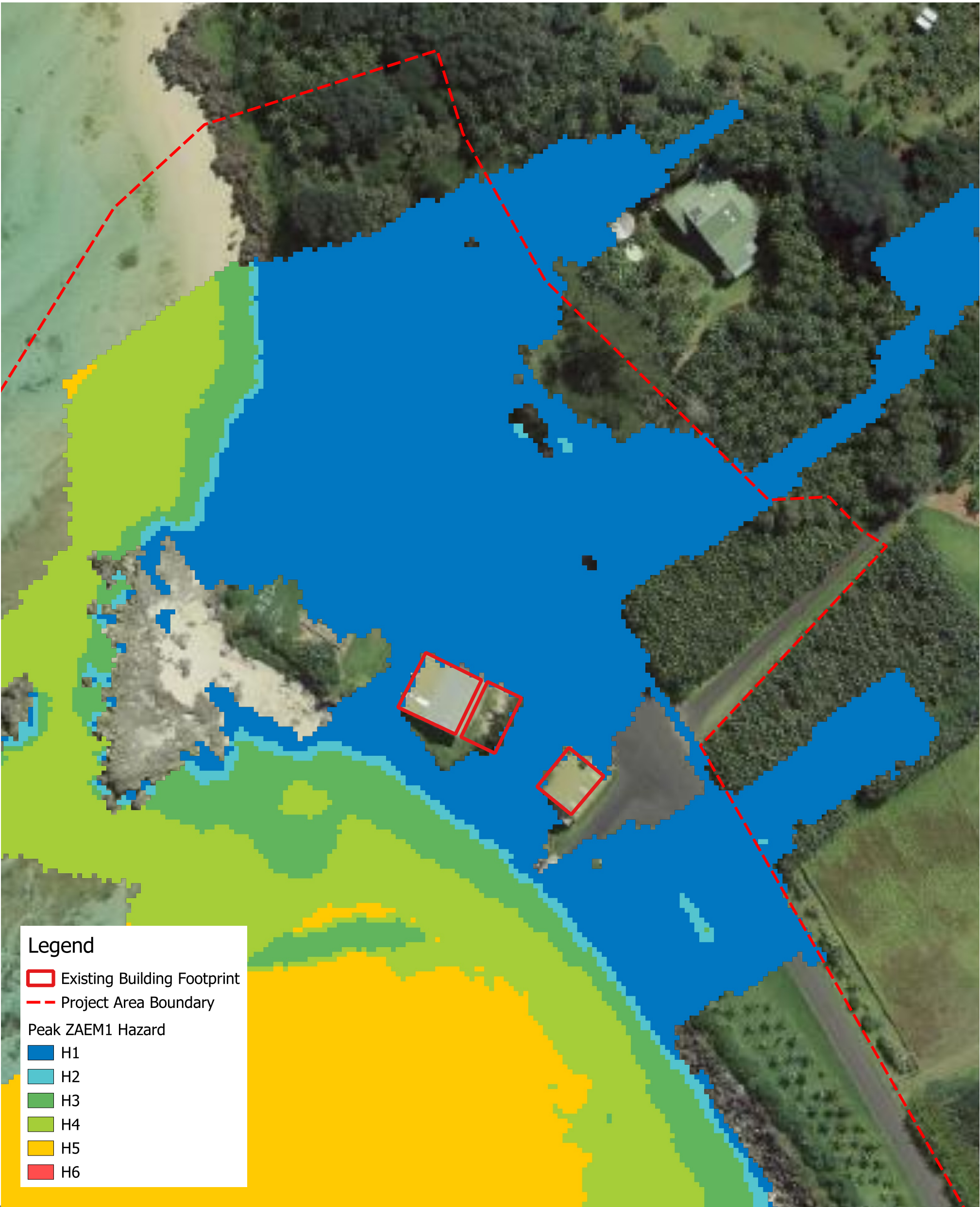
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Legend

-  Existing Building Footprint
-  Project Area Boundary
- Peak ZAEM1 Hazard
 -  H1
 -  H2
 -  H3
 -  H4
 -  H5
 -  H6

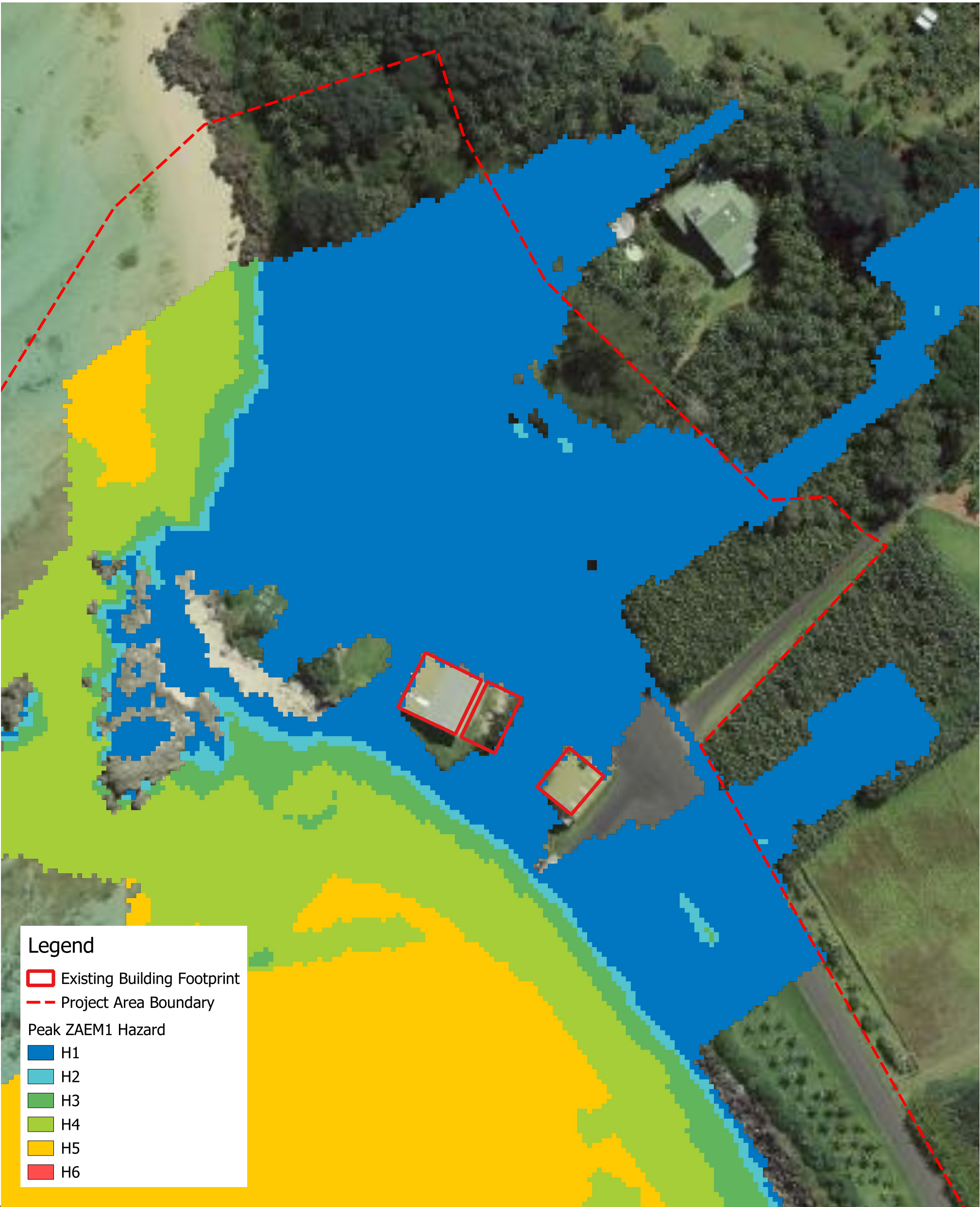
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CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m  PAGE SIZEA3



Legend

- Existing Building Footprint
- Project Area Boundary
- Peak ZAEM1 Hazard
 - H1
 - H2
 - H3
 - H4
 - H5
 - H6

FIGURE TITLE		Peak Hazard - 5% AEP Design Flood - Existing Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
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CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m  PAGE SIZEA3



Legend

Existing Building Footprint

Project Area Boundary

Peak ZAEM1 Hazard

H1

H2

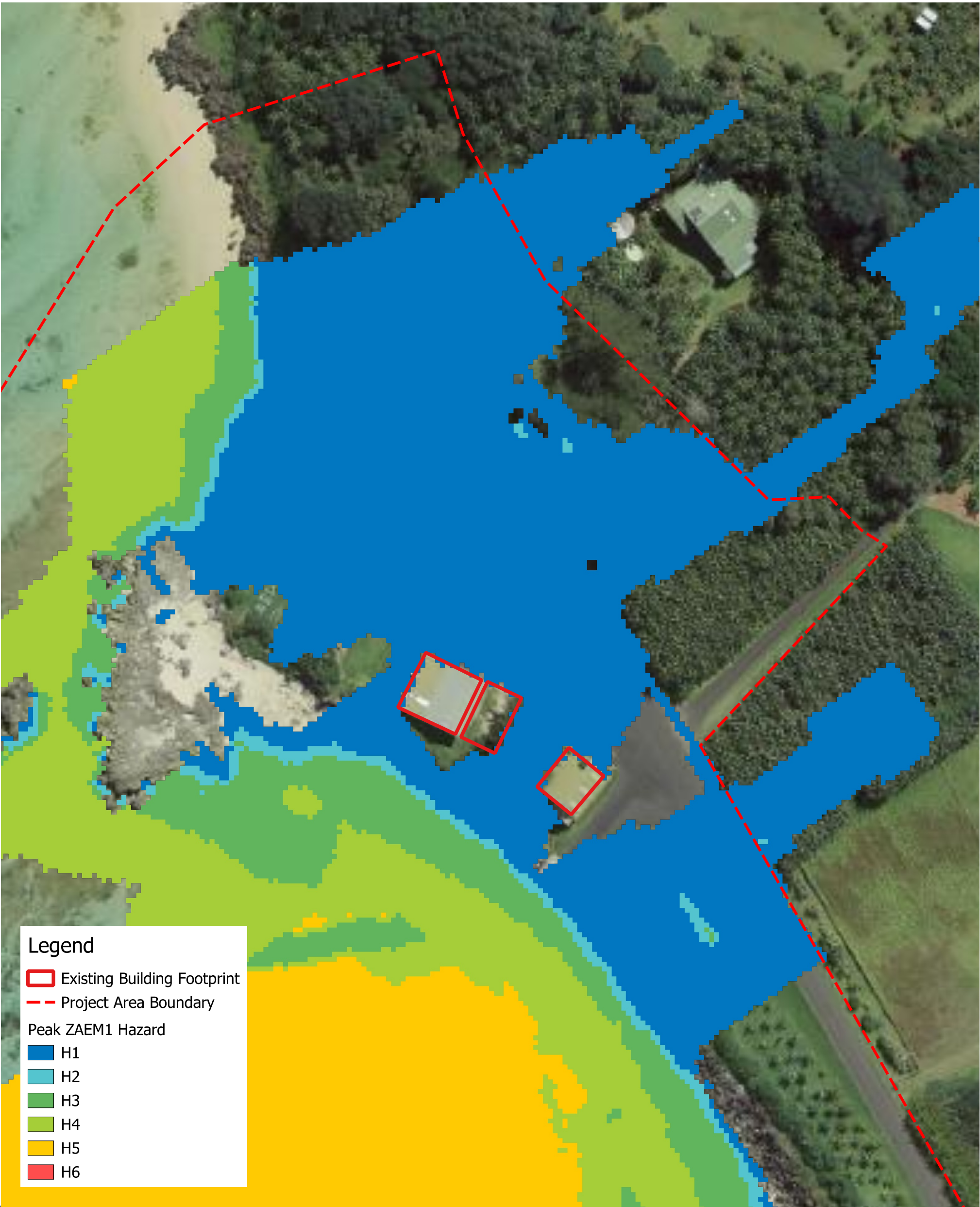
H3

H4

H5

H6

FIGURE TITLE		Peak Hazard - 1% AEP Design Flood - Existing Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
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Legend

Existing Building Footprint

Project Area Boundary

Peak ZAEM1 Hazard

H1

H2

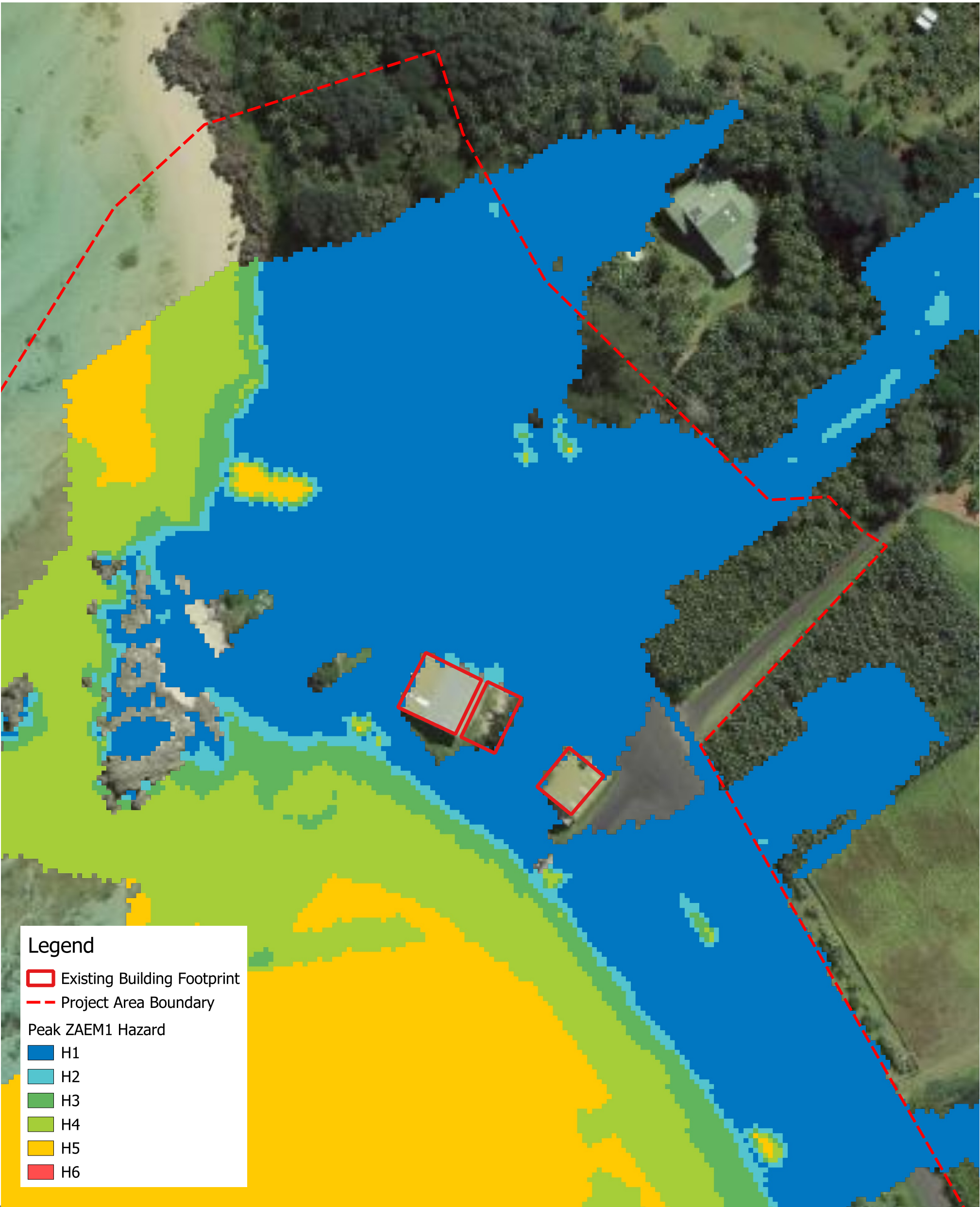
H3

H4

H5

H6

FIGURE TITLE		Peak Hazard - 1 + Climate Change% AEP Design Flood - Existing Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
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CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m N  PAGE SIZEA3



Legend

Existing Building Footprint

Project Area Boundary

Peak ZAEM1 Hazard

H1

H2

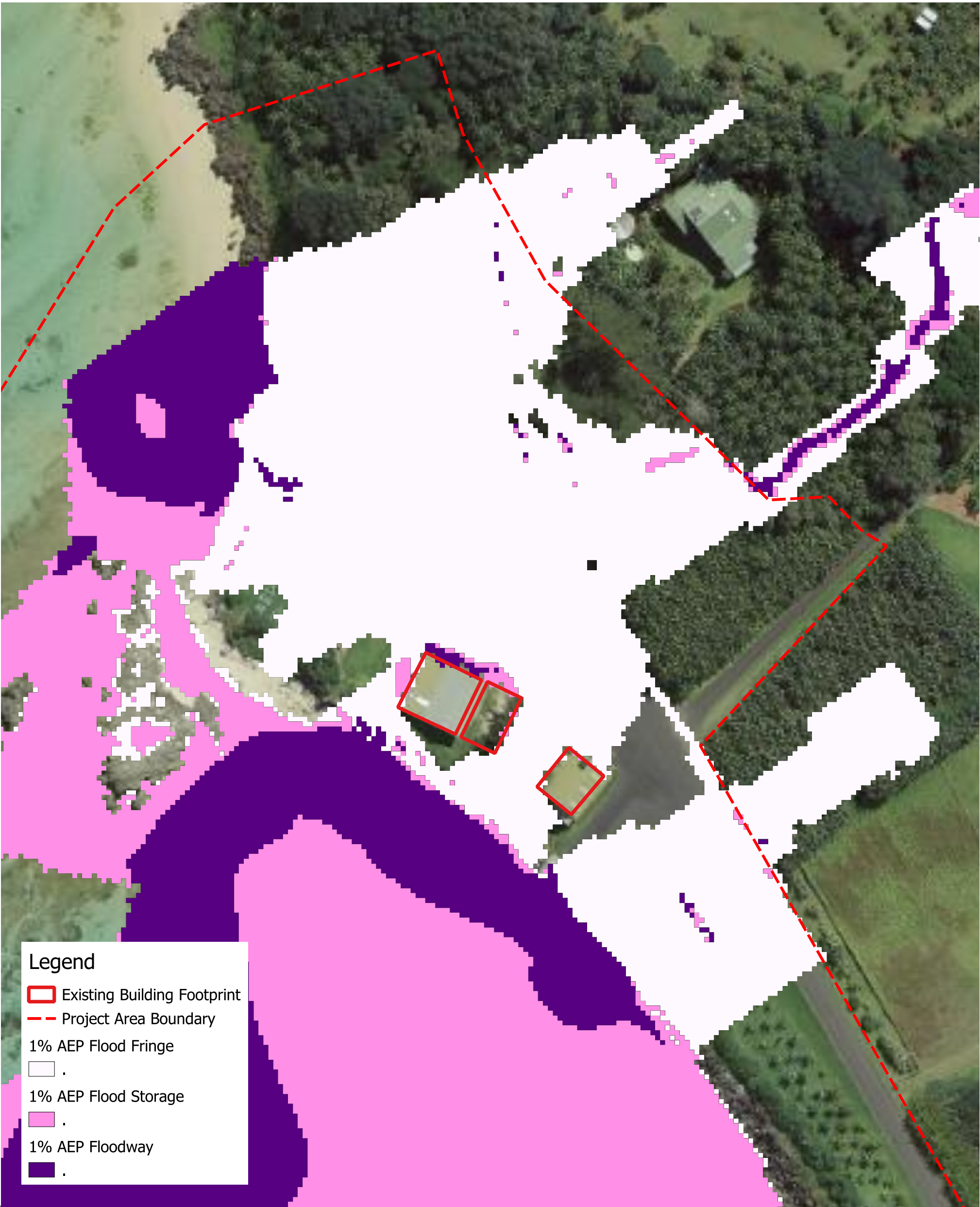
H3

H4

H5

H6

FIGURE TITLE		Peak Hazard - PMF% AEP Design Flood - Existing Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
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CREATED BY		M. PERERA	SOURCES		ESRI (PROJ: GDA1994 MGA Zone 57)	01020304050 m  PAGE SIZEA3



Legend

Existing Building Footprint

Project Area Boundary

1% AEP Flood Fringe

.

1% AEP Flood Storage

.

1% AEP Floodway

.

FIGURE TITLE		Flood Function - 1% AEP Design Flood - Existing Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
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CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m  PAGE SIZEA3

Appendix B

North Model Developed Flood Mapping

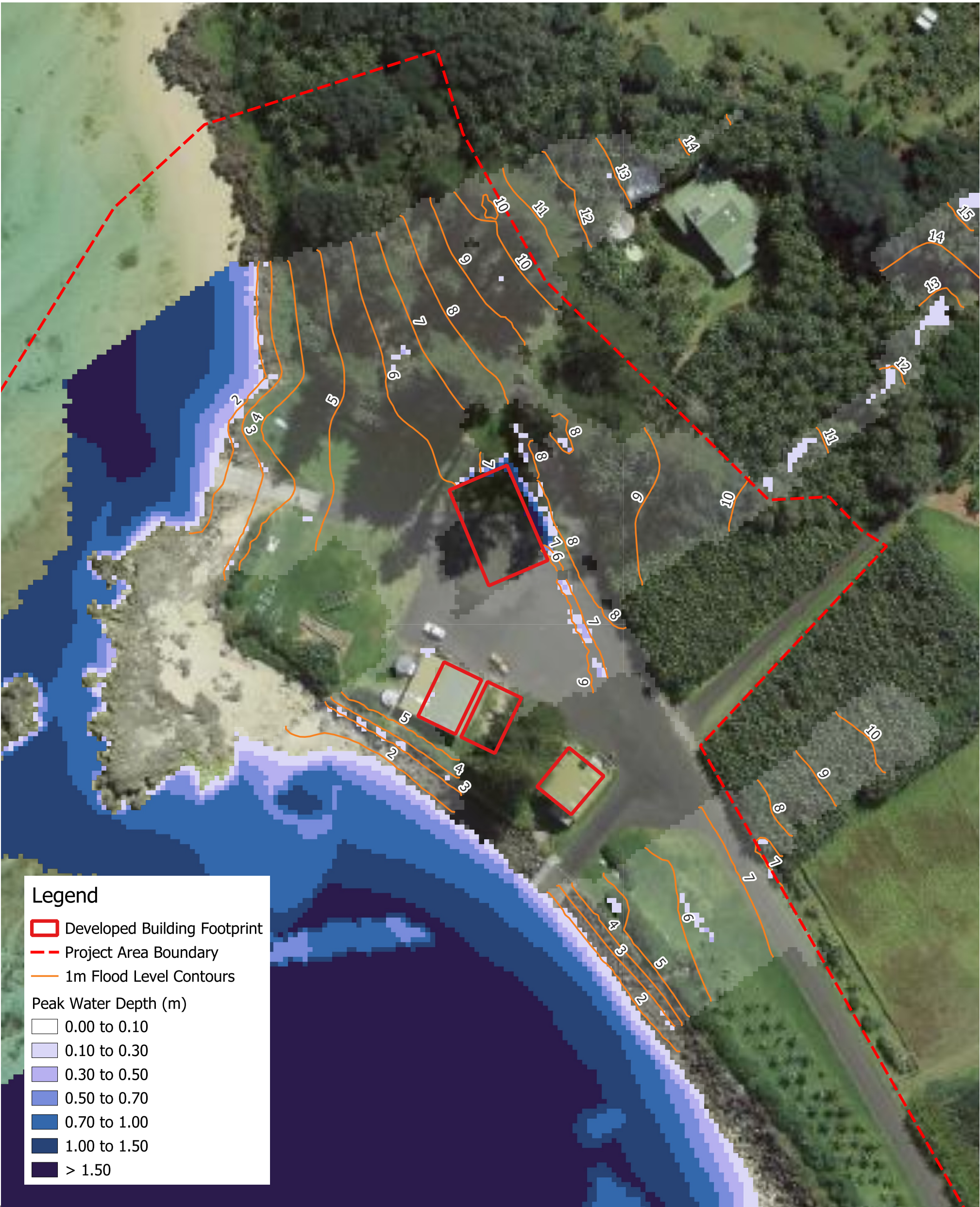


FIGURE TITLE		Peak Water Depth - 20% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		C1.1		SCALE	1:750 at A3	
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program			
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m  PAGE SIZEA3

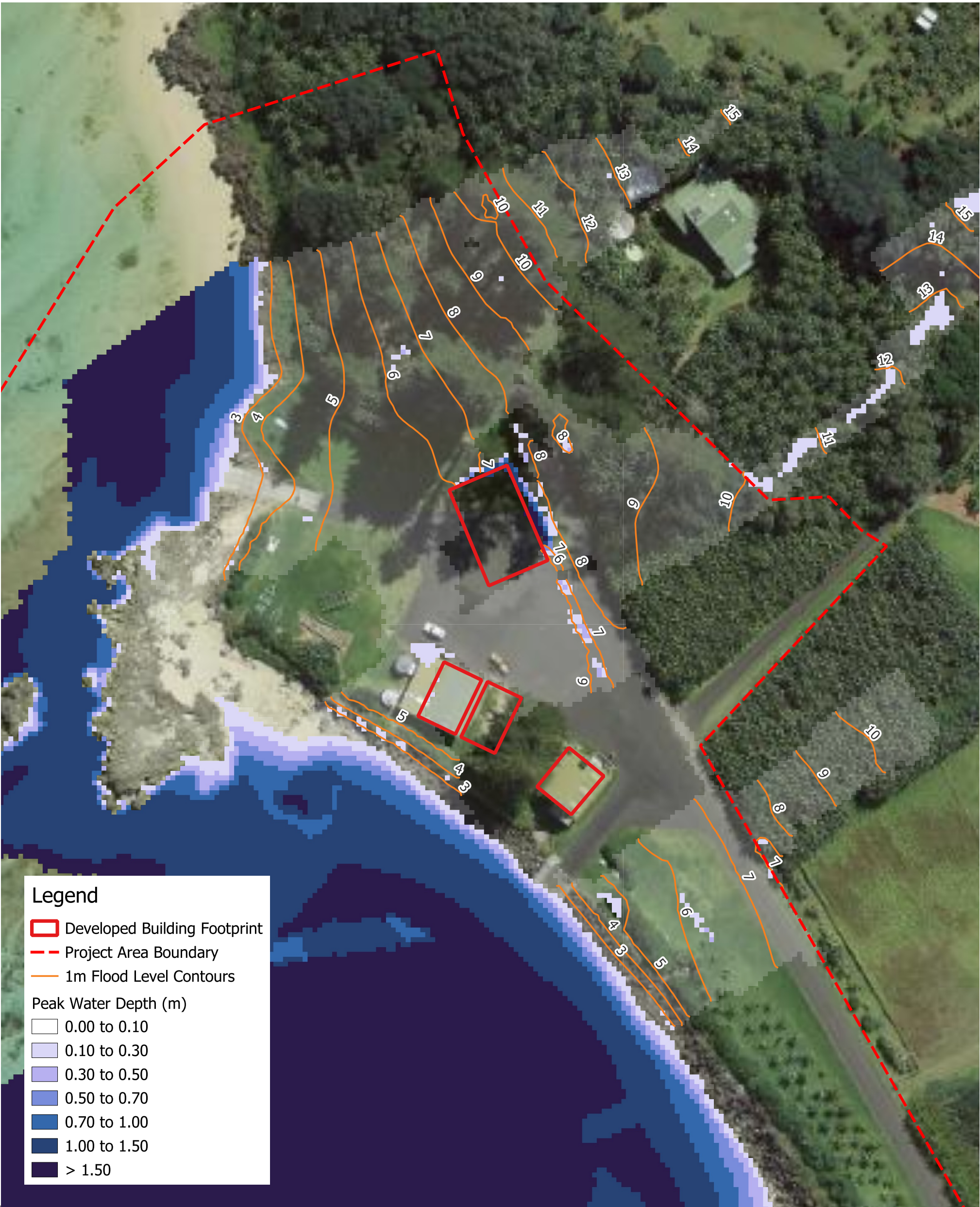


FIGURE TITLE		Peak Water Depth - 5% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		C1.2		SCALE	1:750 at A3	
PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m  PAGE SIZE A3

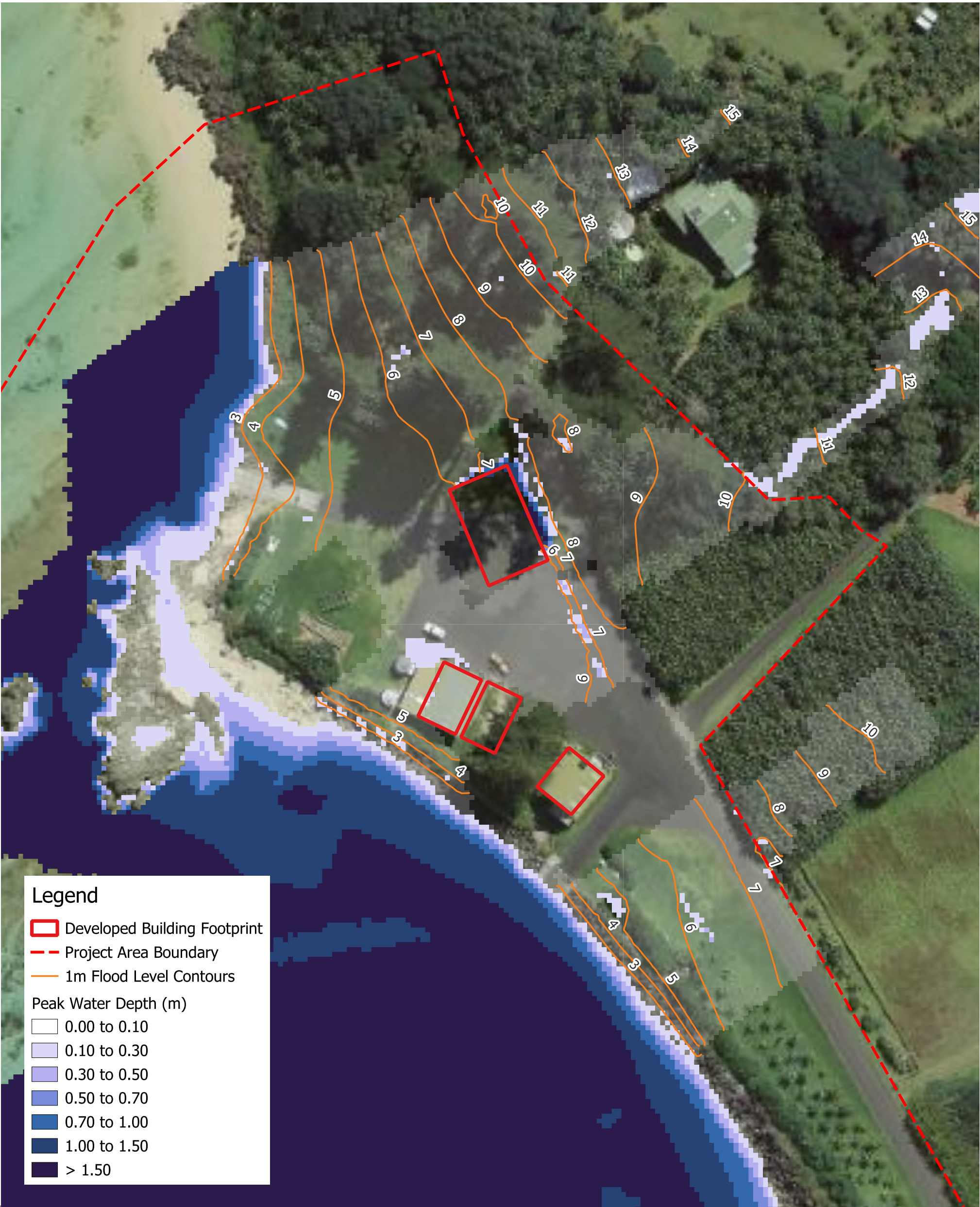


FIGURE TITLE Peak Water Depth - 1% AEP Design Flood - Developed Scenario		DATE 10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO. C1.3		SCALE 1:750 at A3	
PROJECT NO. 30013573A	PROJECT TITLE Lord Howe Island Critical Infrastructure Program		

CREATED BY M. PERERA	SOURCES ESRI (PROJ: GDA1994 MGA Zone 57)	01020304050 m 	PAGE SIZE A3
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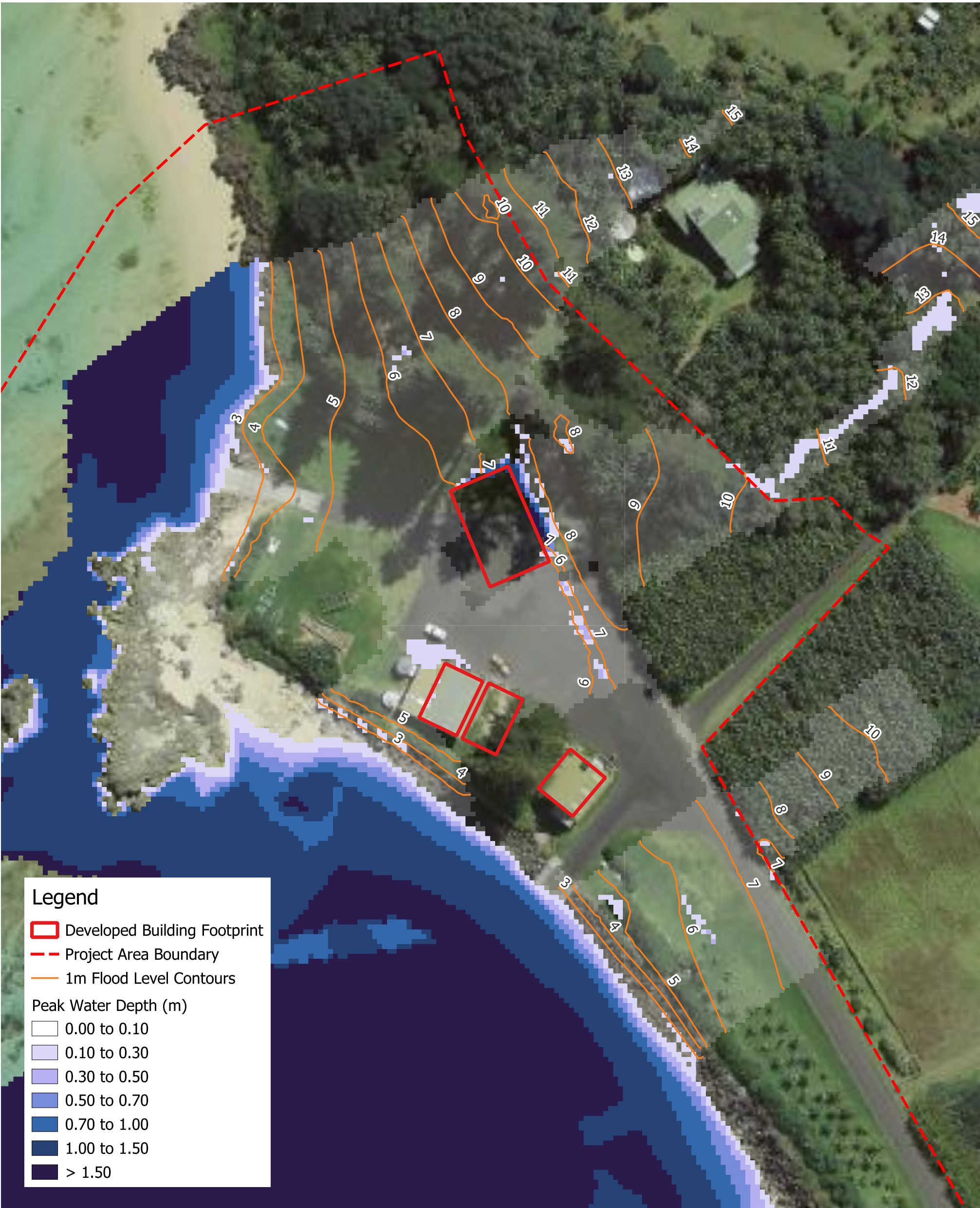
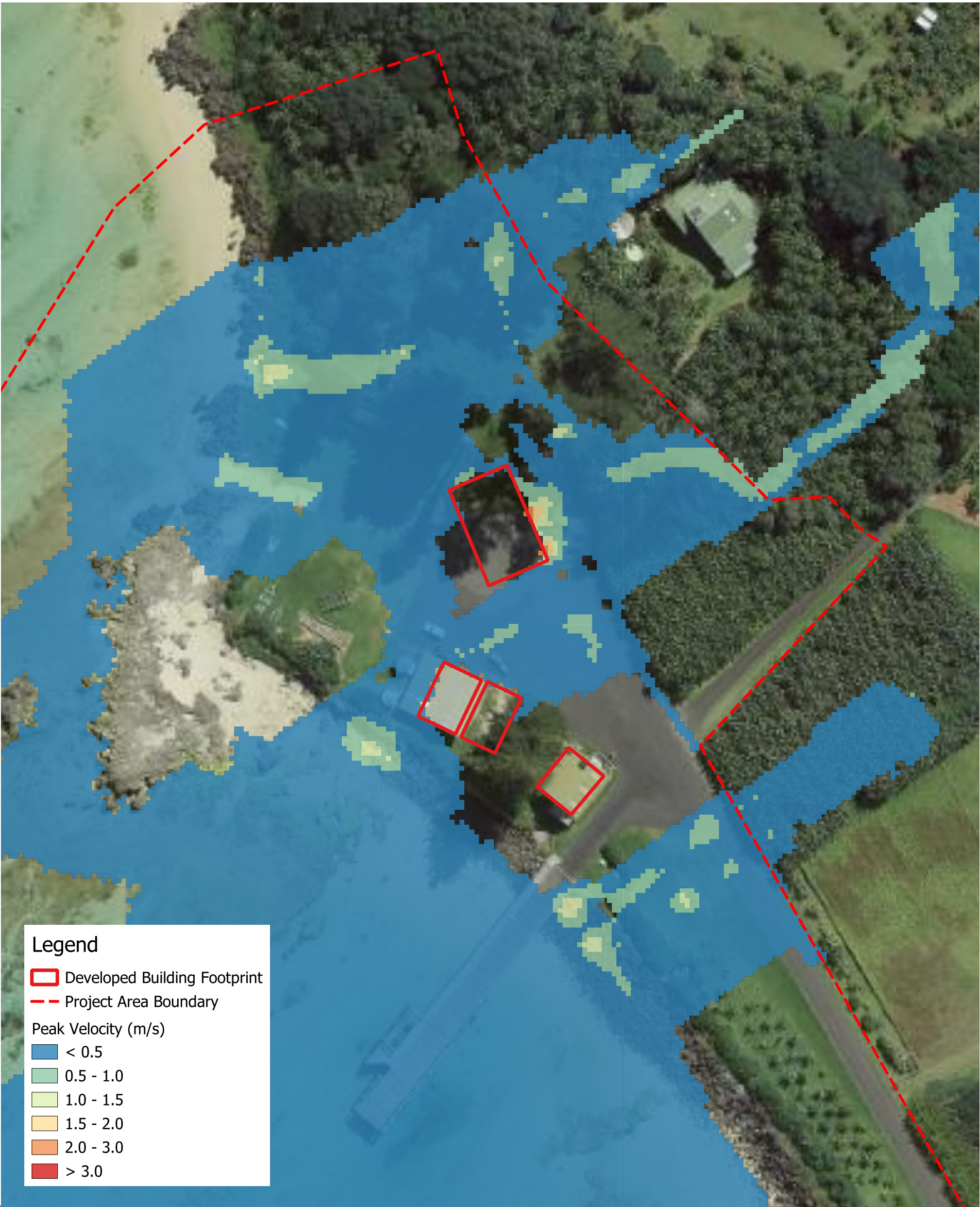


FIGURE TITLE		Peak Water Depth - 1 + Climate Change% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		C1.4		SCALE	1:750 at A3	
PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m  PAGE SIZEA3



Legend

Developed Building Footprint

Project Area Boundary

Peak Velocity (m/s)

< 0.5

0.5 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 3.0

> 3.0

FIGURE TITLE	Peak Velocity - 20% AEP Design Flood - Developed Scenario		DATE	10-09-2025
DRAWING NO.	C2.1		SCALE	1:750 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program	
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)	

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smec

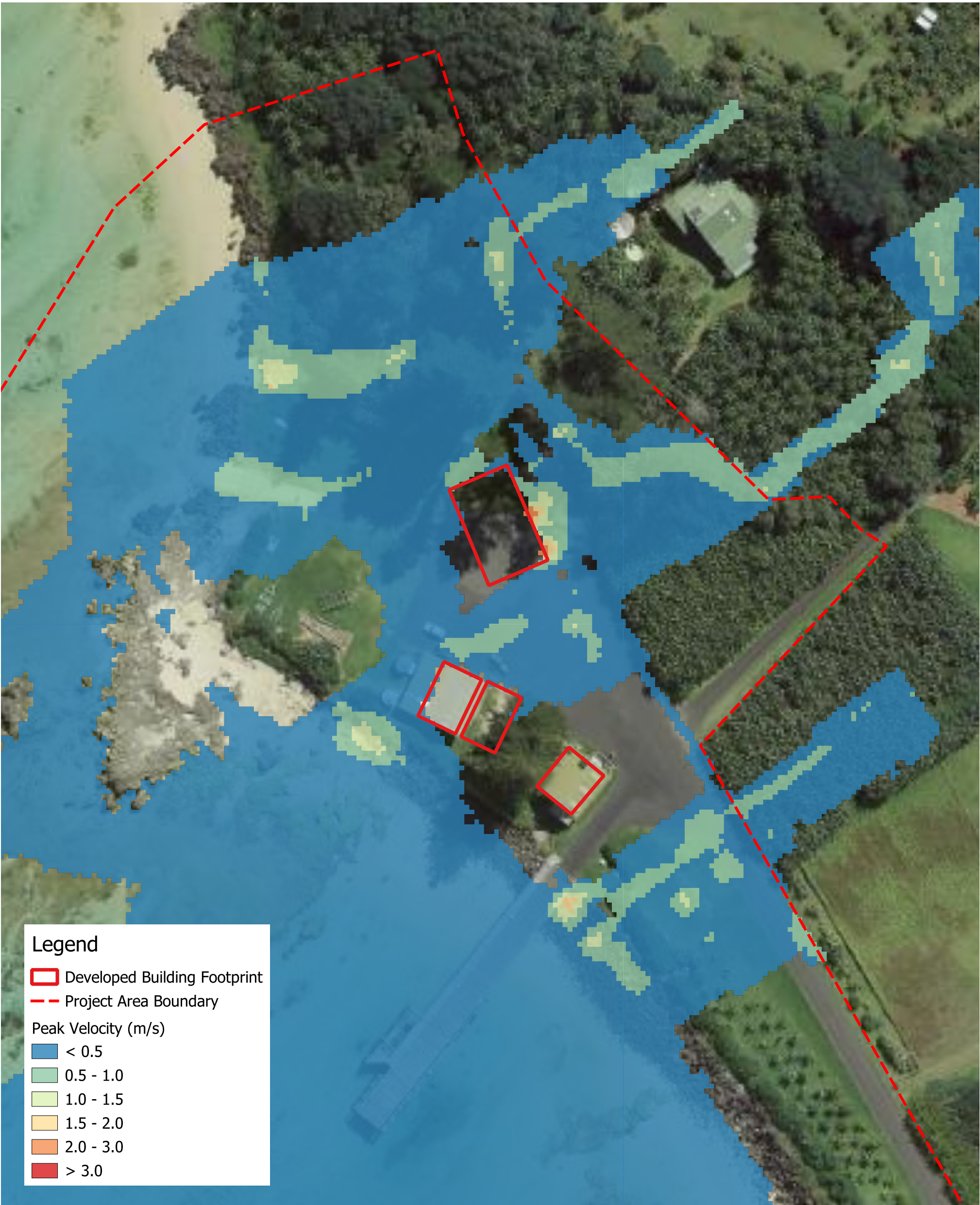
SMEC AUSTRALIA PTY LTD
ABN 47 065 475 149

01020304050 m

N

PAGE SIZEA3

Filepath: Z:\TUFLOW_Projects\12_ 30013573 - Lord Howe Island\02 QGIS\05 Workspaces\Lord Howe Island_T11.qgz



Legend

Developed Building Footprint

Project Area Boundary

Peak Velocity (m/s)

< 0.5

0.5 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 3.0

> 3.0

FIGURE TITLE	Peak Velocity - 5% AEP Design Flood - Developed Scenario	DATE	10-09-2025
DRAWING NO.	C2.2	SCALE	1:750 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)

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smec

SMEC AUSTRALIA PTY LTD
ABN 47 065 475 149

01020304050 m

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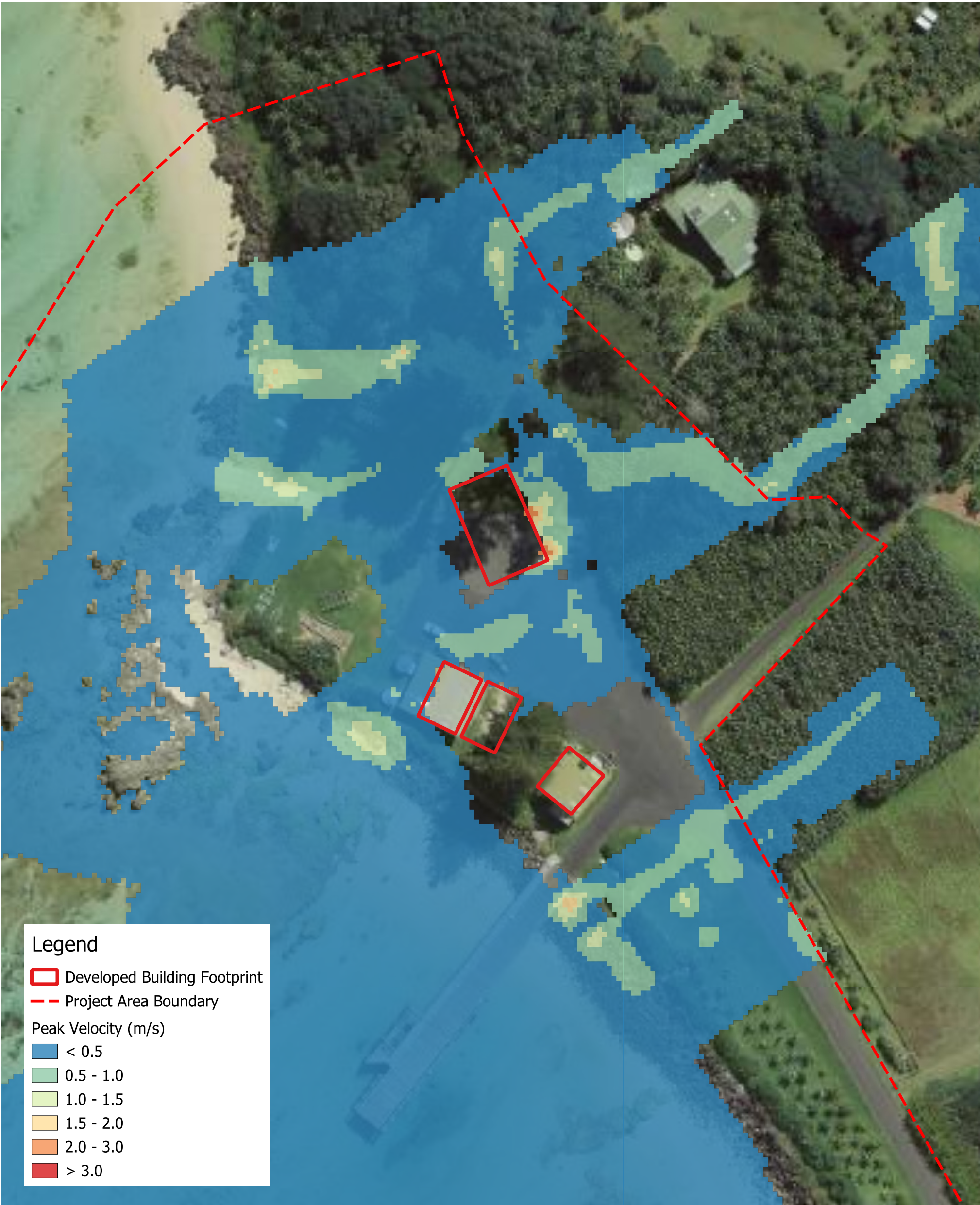
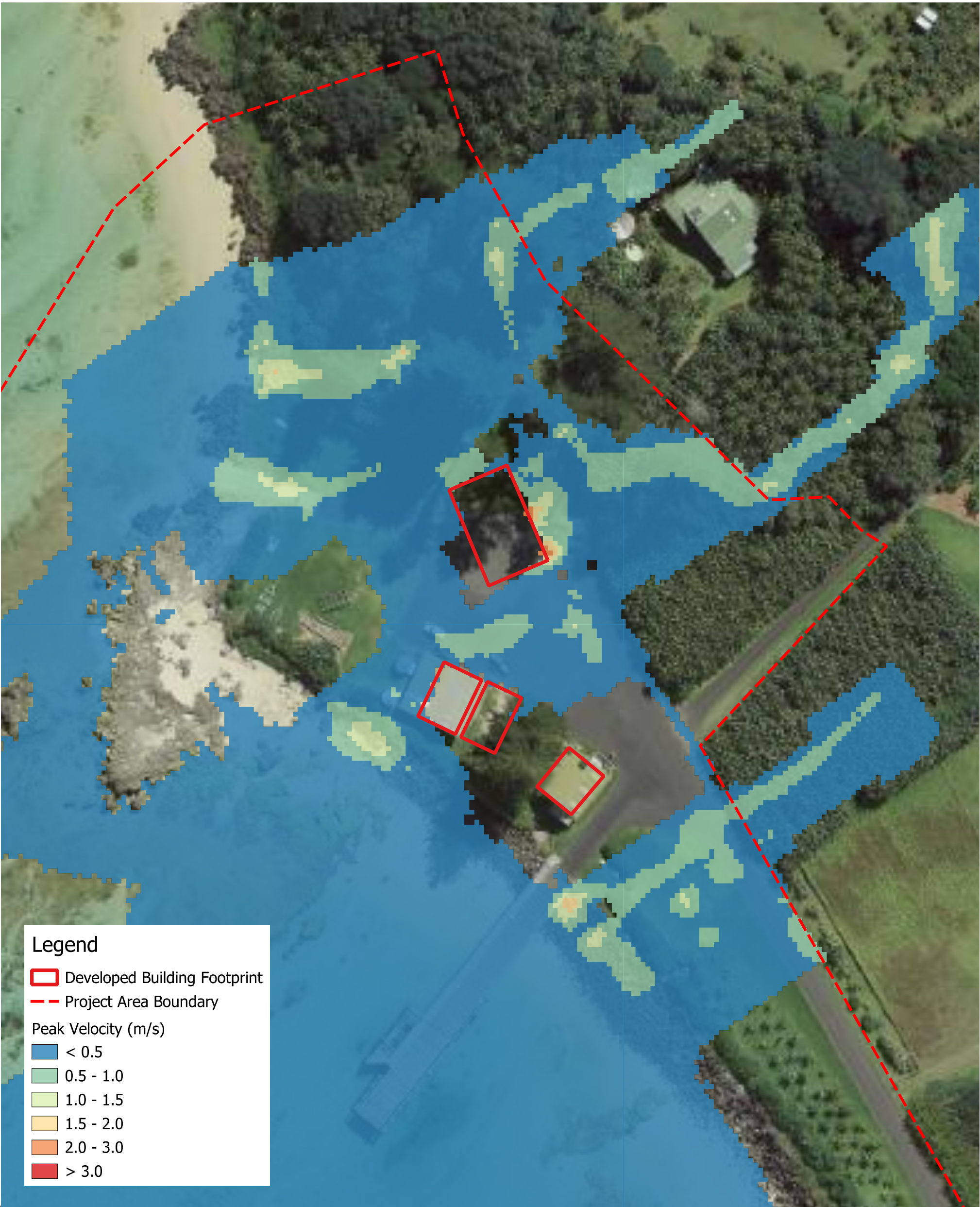


FIGURE TITLE		Peak Velocity - 1% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		C2.3		SCALE	1:750 at A3	
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program			
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m 	
					PAGE SIZE A3	



Legend

Developed Building Footprint

Project Area Boundary

Peak Velocity (m/s)

< 0.5

0.5 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 3.0

> 3.0

FIGURE TITLE	Peak Velocity - 1 + Climate Change% AEP Design Flood - Developed Scenario		DATE	10-09-2025
DRAWING NO.	C2.4		SCALE	1:750 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program	
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)	

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smec

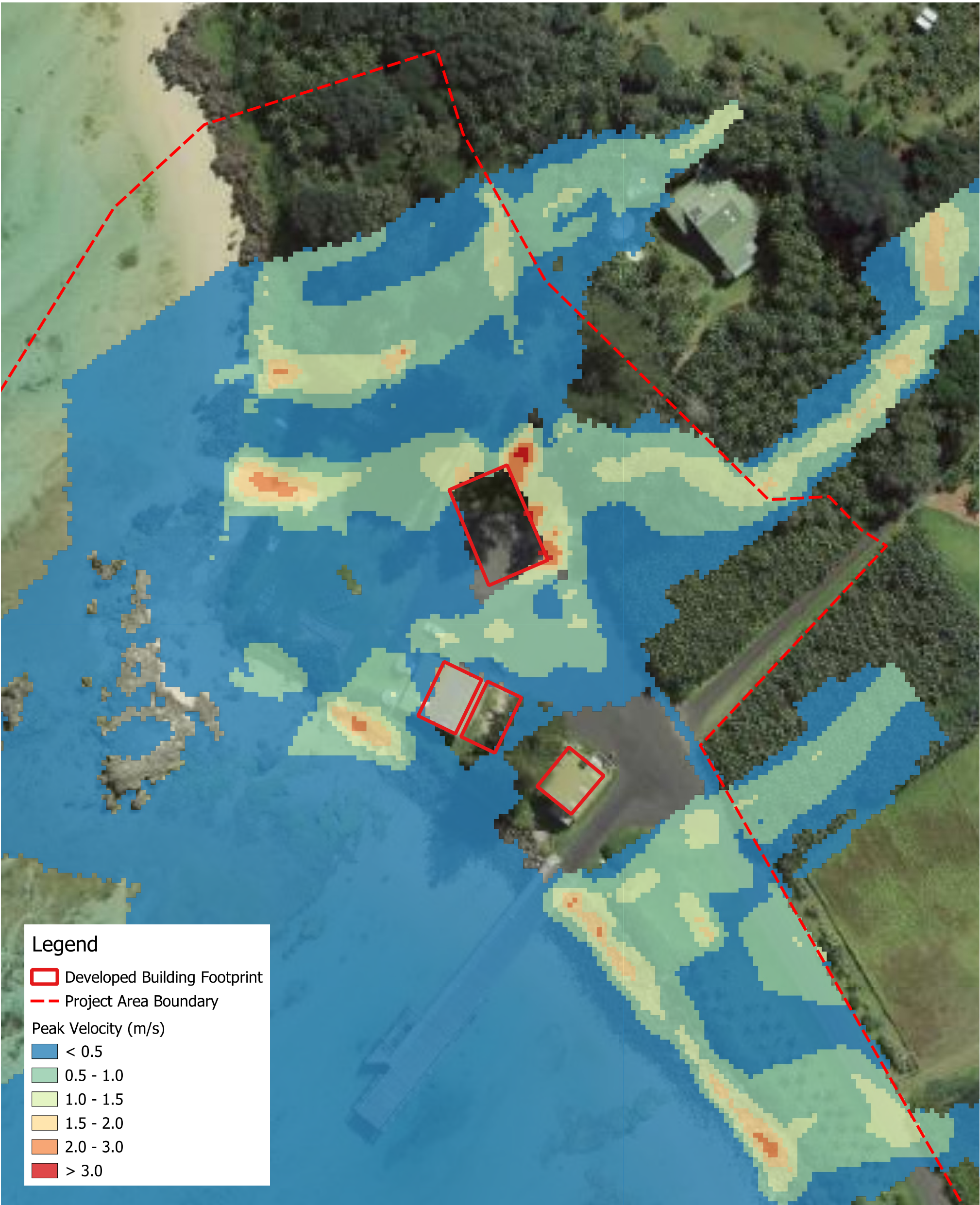
SMEC AUSTRALIA PTY LTD
ABN 47 065 475 149

01020304050 m

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PAGE SIZEA3

Filepath: Z:\TUFLOW_Projects\12_ 30013573 - Lord Howe Island\02 QGIS\05 Workspaces\Lord Howe Island_T11.qgz



Legend

Developed Building Footprint

Project Area Boundary

Peak Velocity (m/s)

< 0.5

0.5 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 3.0

> 3.0

FIGURE TITLE	Peak Velocity - PMF% AEP Design Flood - Developed Scenario		DATE	10-09-2025
DRAWING NO.	C2.5		SCALE	1:750 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program	
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)	

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smec

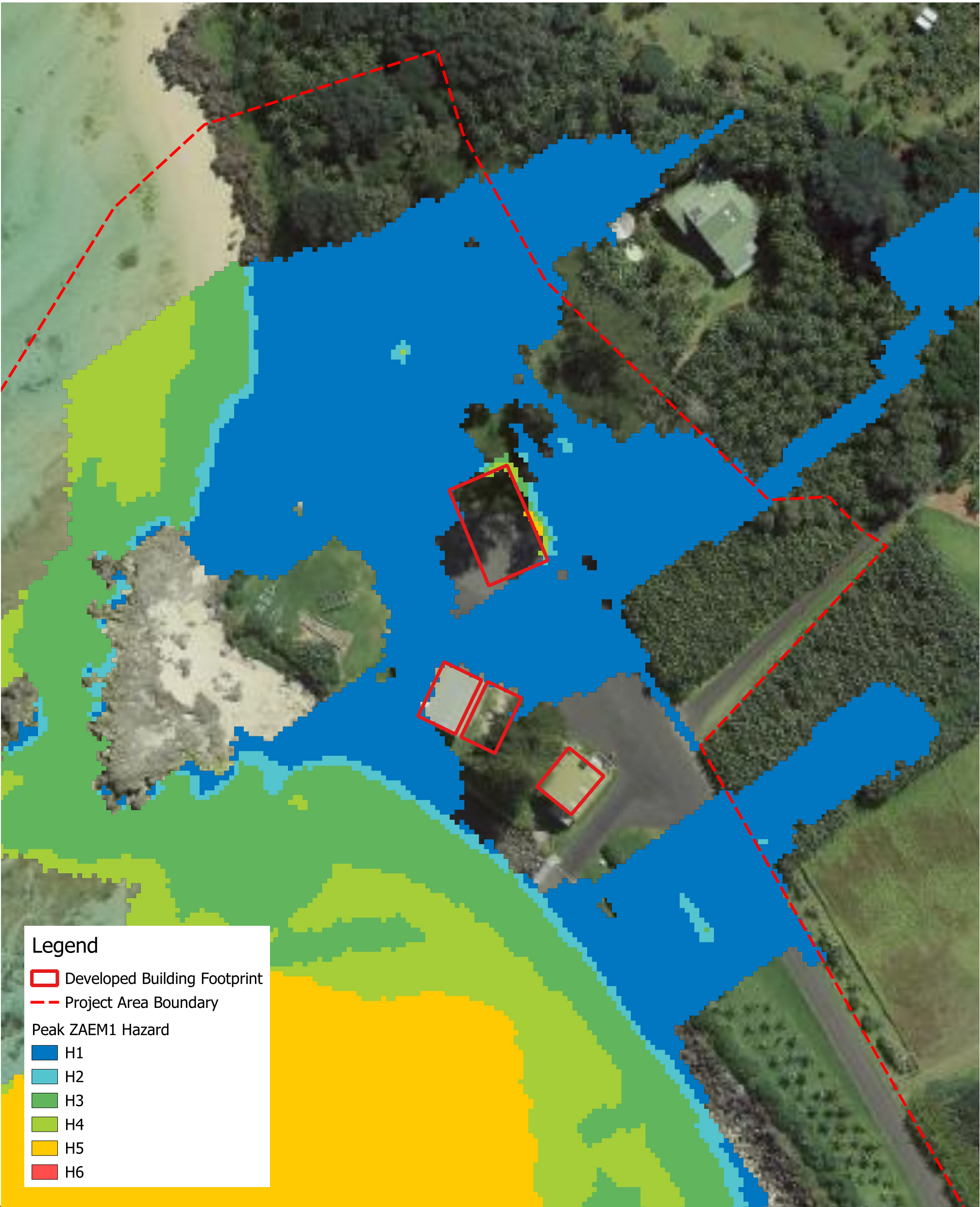
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ABN 47 065 475 149

01020304050 m

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PAGE SIZEA3

Filepath: Z:\TUFLOW_Projects\12_ 30013573 - Lord Howe Island\02 QGIS\05 Workspaces\Lord Howe Island_T11.qgz



Legend

Developed Building Footprint

Project Area Boundary

Peak ZAEM1 Hazard

H1

H2

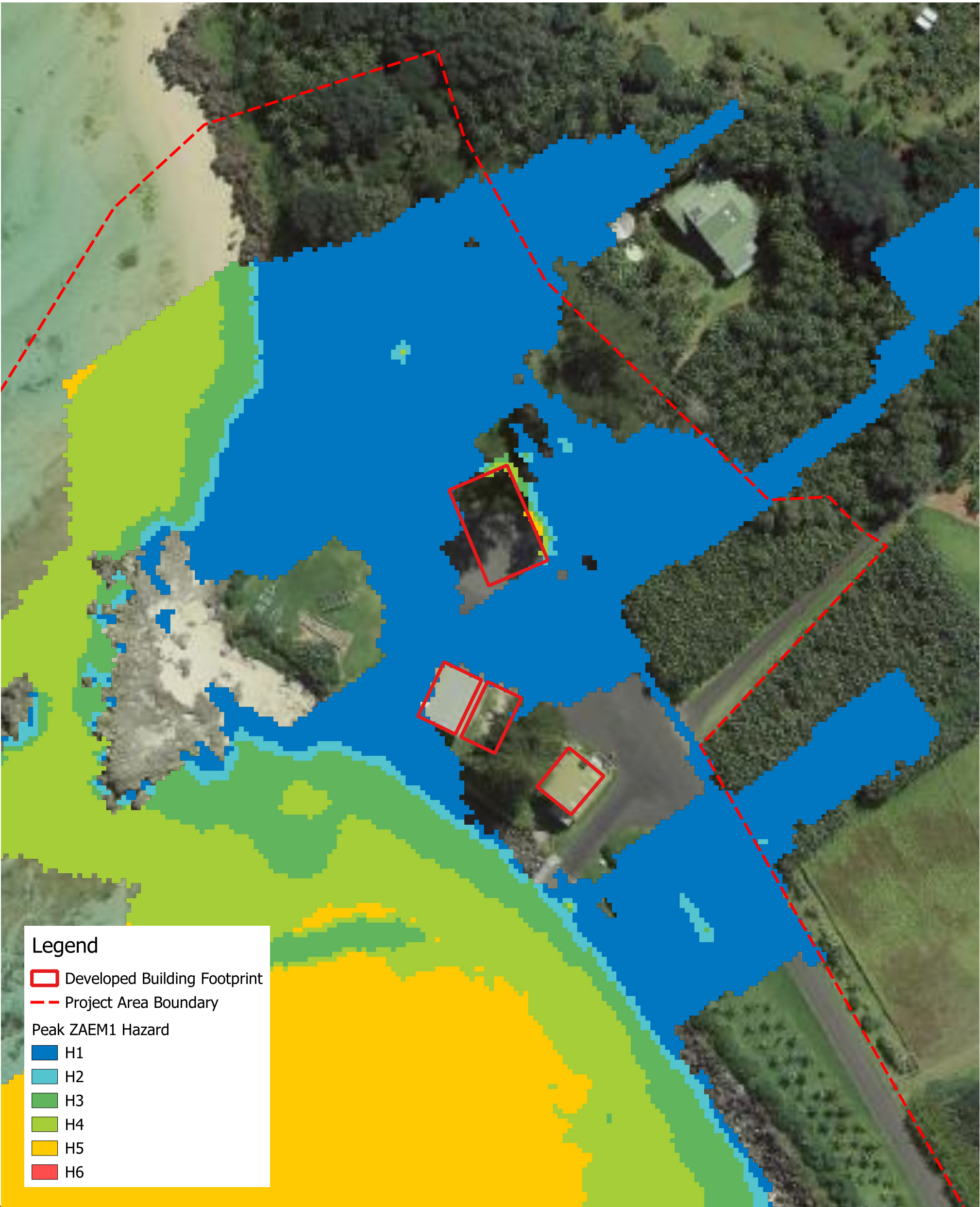
H3

H4

H5

H6

FIGURE TITLE		Peak Hazard - 20% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		C3.1		SCALE	1:750 at A3	
PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m  PAGE SIZE A3



Legend

Developed Building Footprint

Project Area Boundary

Peak ZAEM1 Hazard

H1

H2

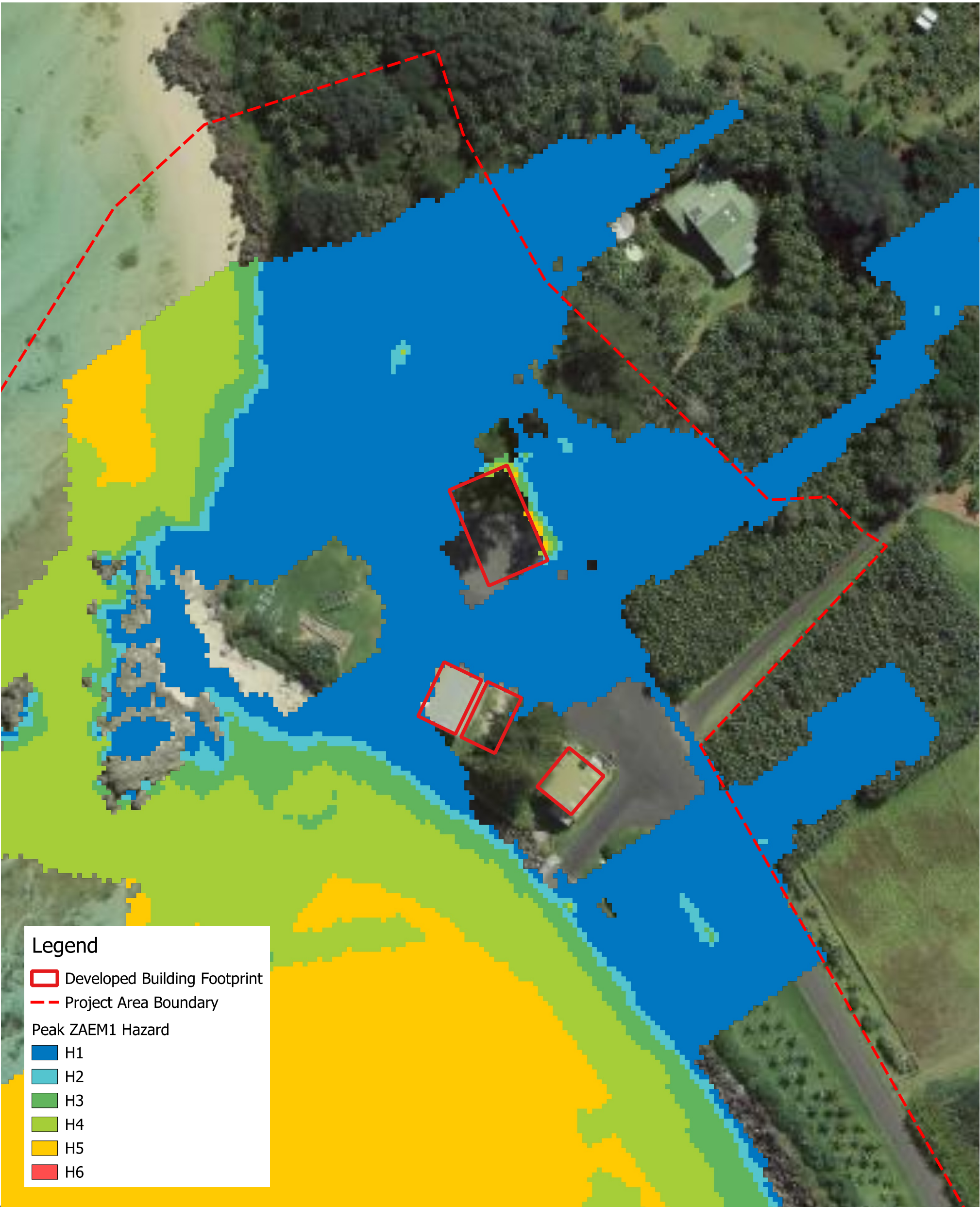
H3

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H5

H6

FIGURE TITLE		Peak Hazard - 5% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		C3.2		SCALE	1:750 at A3	
PROJECT NO.		30013573A	PROJECT TITLE Lord Howe Island Critical Infrastructure Program			
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m  PAGE SIZEA3



Legend

Developed Building Footprint

Project Area Boundary

Peak ZAEM1 Hazard

H1

H2

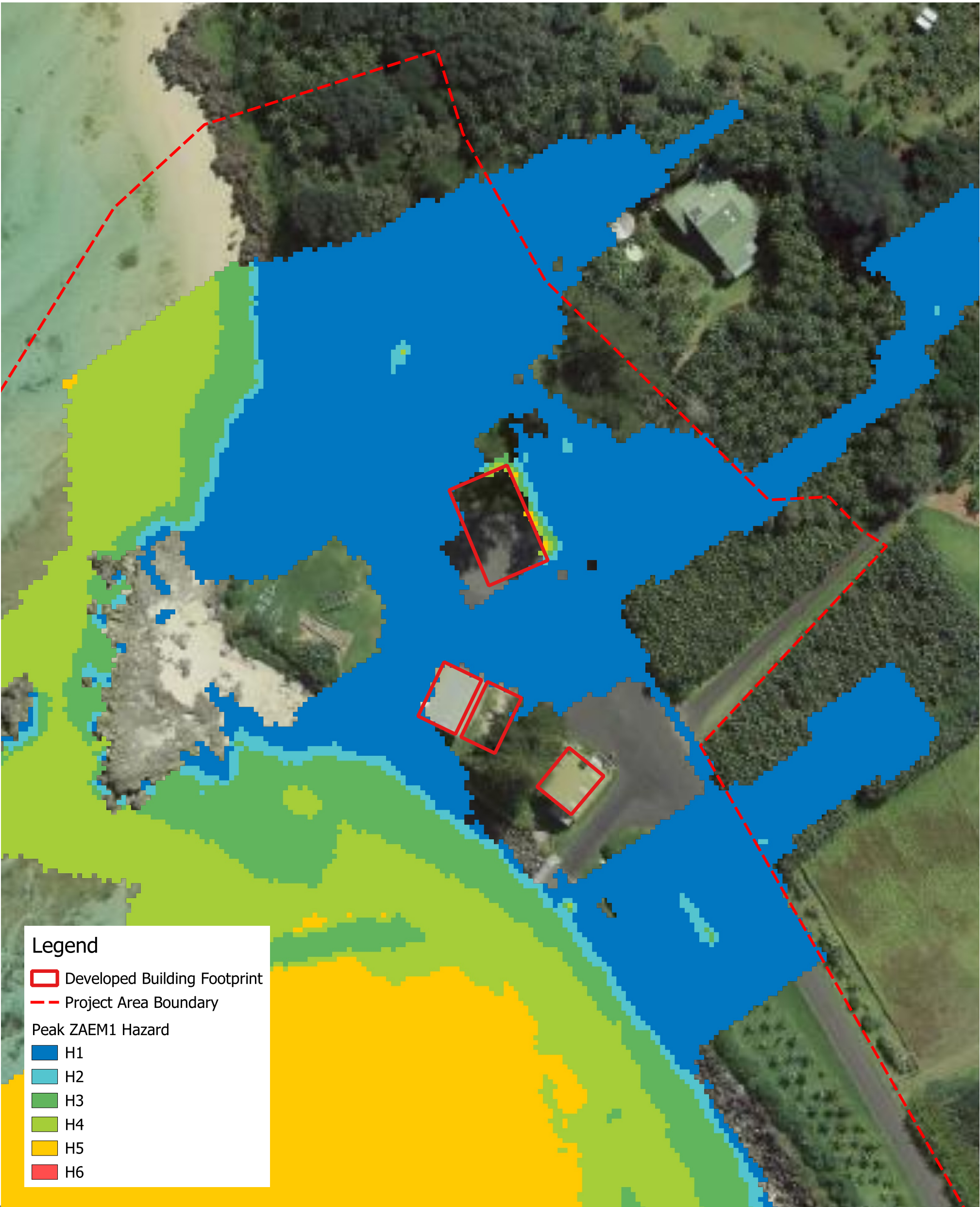
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H4

H5

H6

FIGURE TITLE		Peak Hazard - 1% AEP Design Flood - Developed Scenario		DATE	10-09-2025		© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		C3.3		SCALE	1:750 at A3		
PROJECT NO.		30013573A	PROJECT TITLE		Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES		ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m N PAGE SIZE A3



Legend

Developed Building Footprint

Project Area Boundary

Peak ZAEM1 Hazard

H1

H2

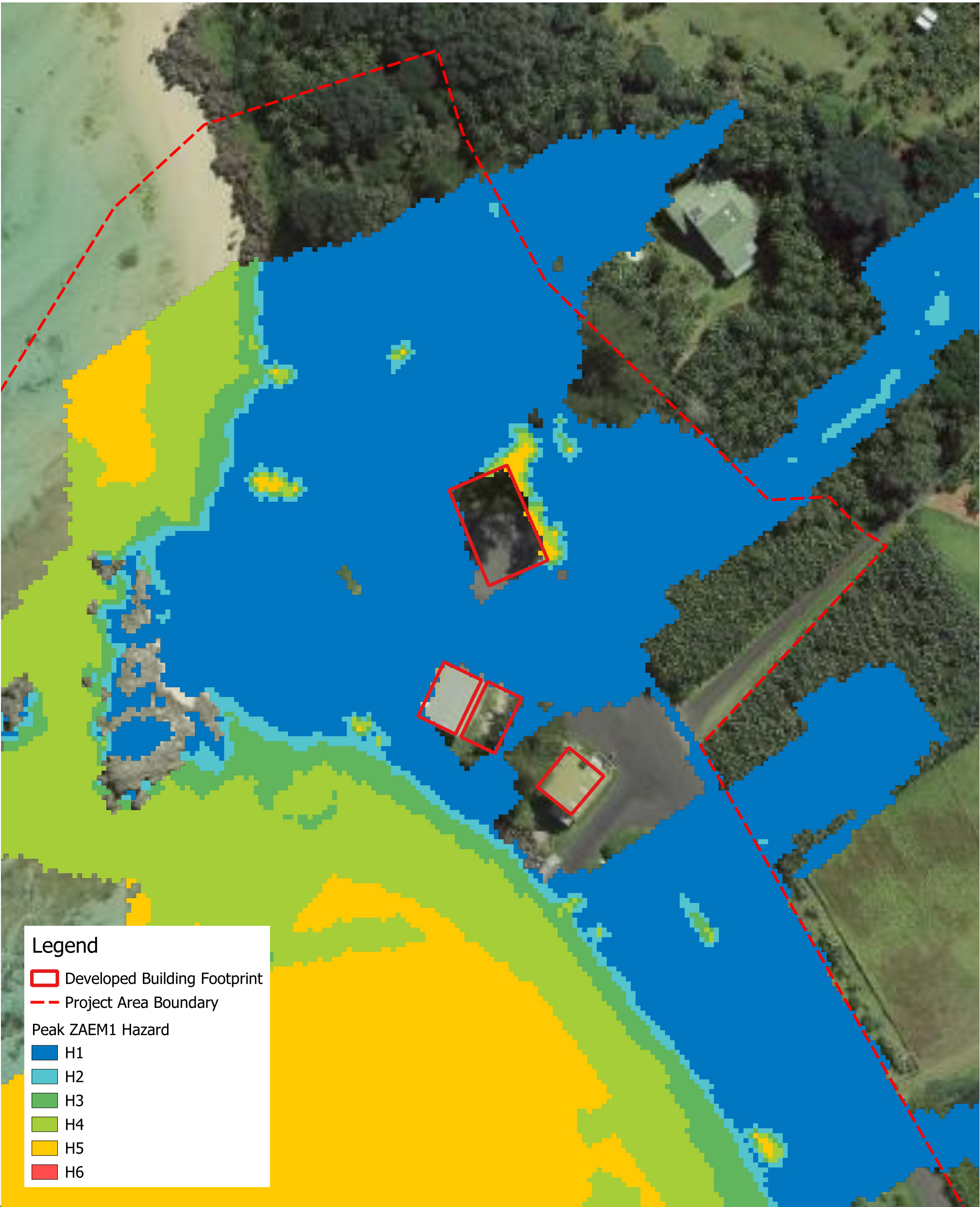
H3

H4

H5

H6

FIGURE TITLE		Peak Hazard - 1 + Climate Change% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		C3.4		SCALE	1:750 at A3	
PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m N PAGE SIZEA3



Legend

Developed Building Footprint

Project Area Boundary

Peak ZAEM1 Hazard

H1

H2

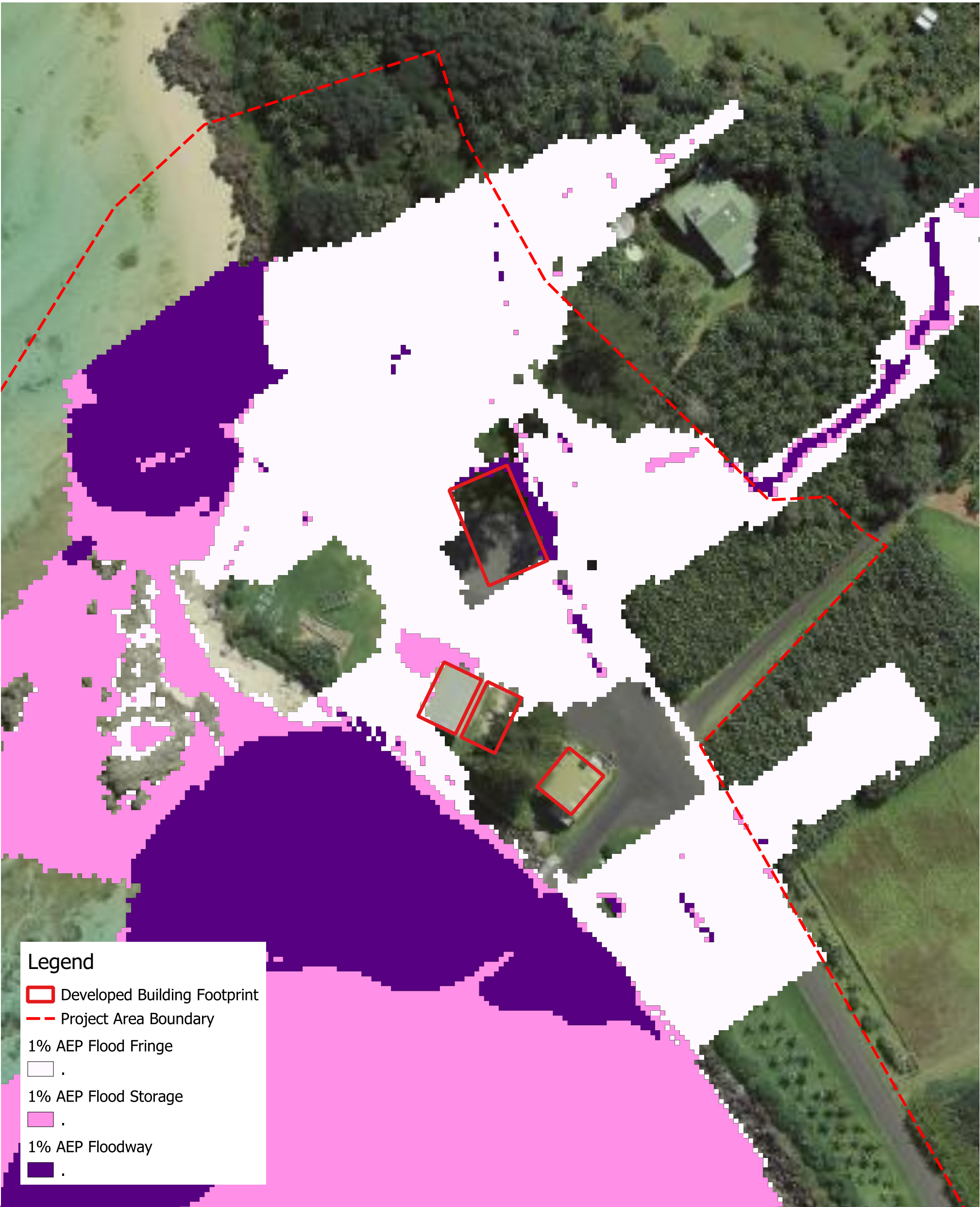
H3

H4

H5

H6

FIGURE TITLE		Peak Hazard - PMF% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		C3.5		SCALE	1:750 at A3	
PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m  N  PAGE SIZEA3



Legend

Developed Building Footprint

Project Area Boundary

1% AEP Flood Fringe

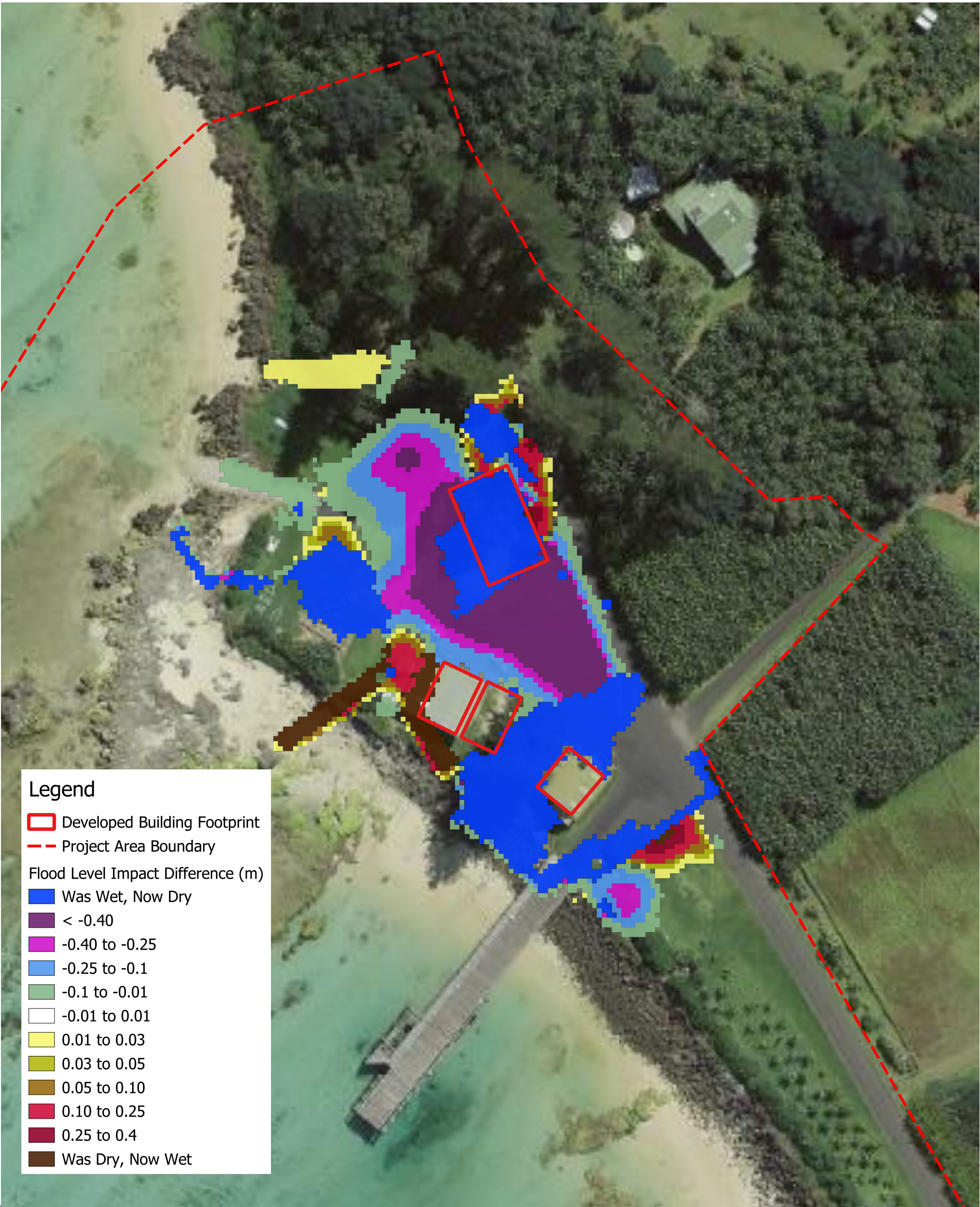
1% AEP Flood Storage

1% AEP Floodway

FIGURE TITLE		Flood Function - 1% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		C4.1		SCALE	1:750 at A3	
PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m  N  PAGE SIZEA3

Appendix C

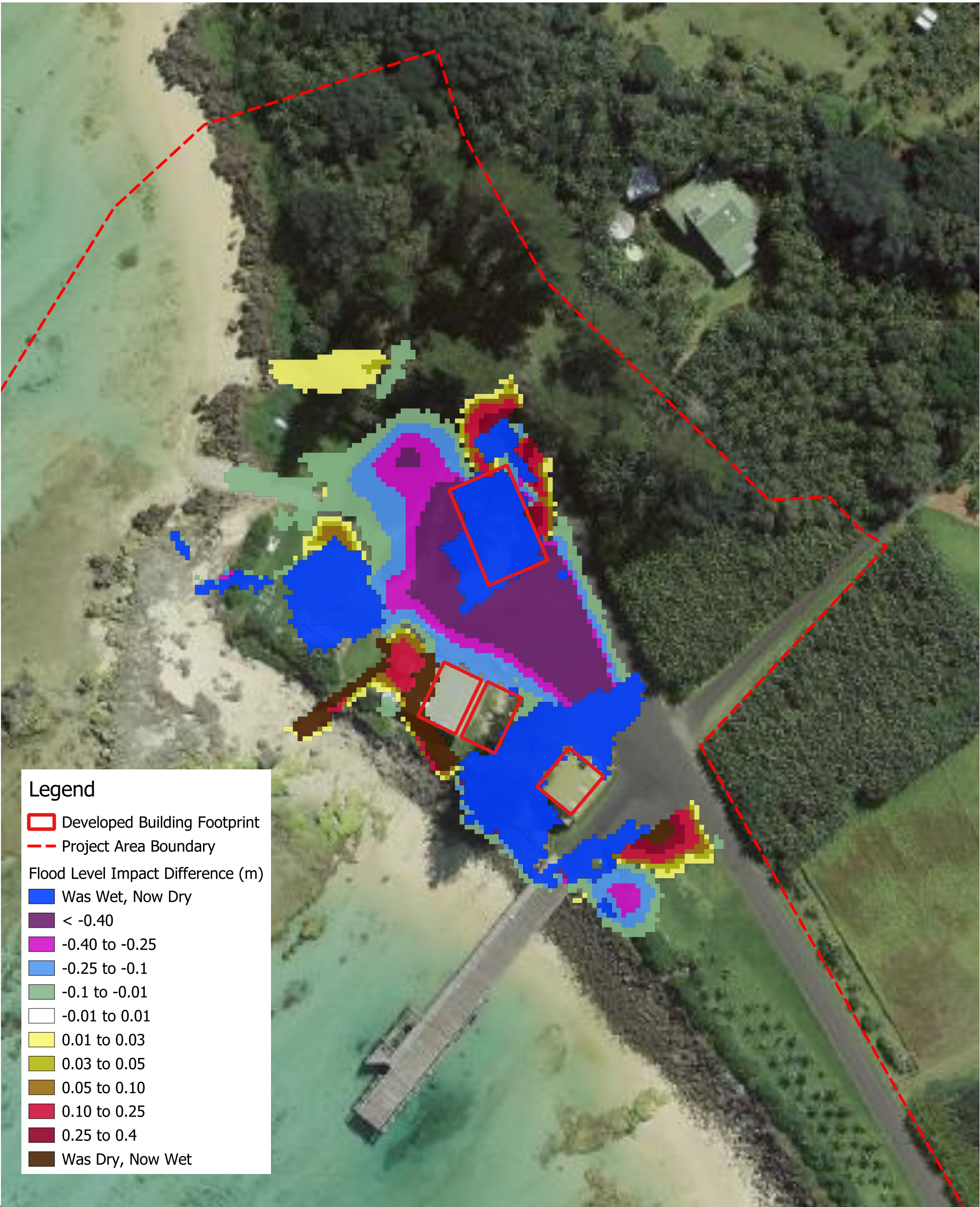
North Model Impact Difference Mapping



Legend

- Developed Building Footprint
- Project Area Boundary
- Flood Level Impact Difference (m)
 - Was Wet, Now Dry
 - < -0.40
 - 0.40 to -0.25
 - 0.25 to -0.1
 - 0.1 to -0.01
 - 0.01 to 0.01
 - 0.01 to 0.03
 - 0.03 to 0.05
 - 0.05 to 0.10
 - 0.10 to 0.25
 - 0.25 to 0.4
 - Was Dry, Now Wet

FIGURE TITLE		Impact Difference - 20% AEP Design Flood - Impact Difference		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document. SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		D1.1		SCALE	1:750 at A3	
PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m PAGE SIZEA3



Legend

Developed Building Footprint

Project Area Boundary

Flood Level Impact Difference (m)

Was Wet, Now Dry

< -0.40

-0.40 to -0.25

-0.25 to -0.1

-0.1 to -0.01

-0.01 to 0.01

0.01 to 0.03

0.03 to 0.05

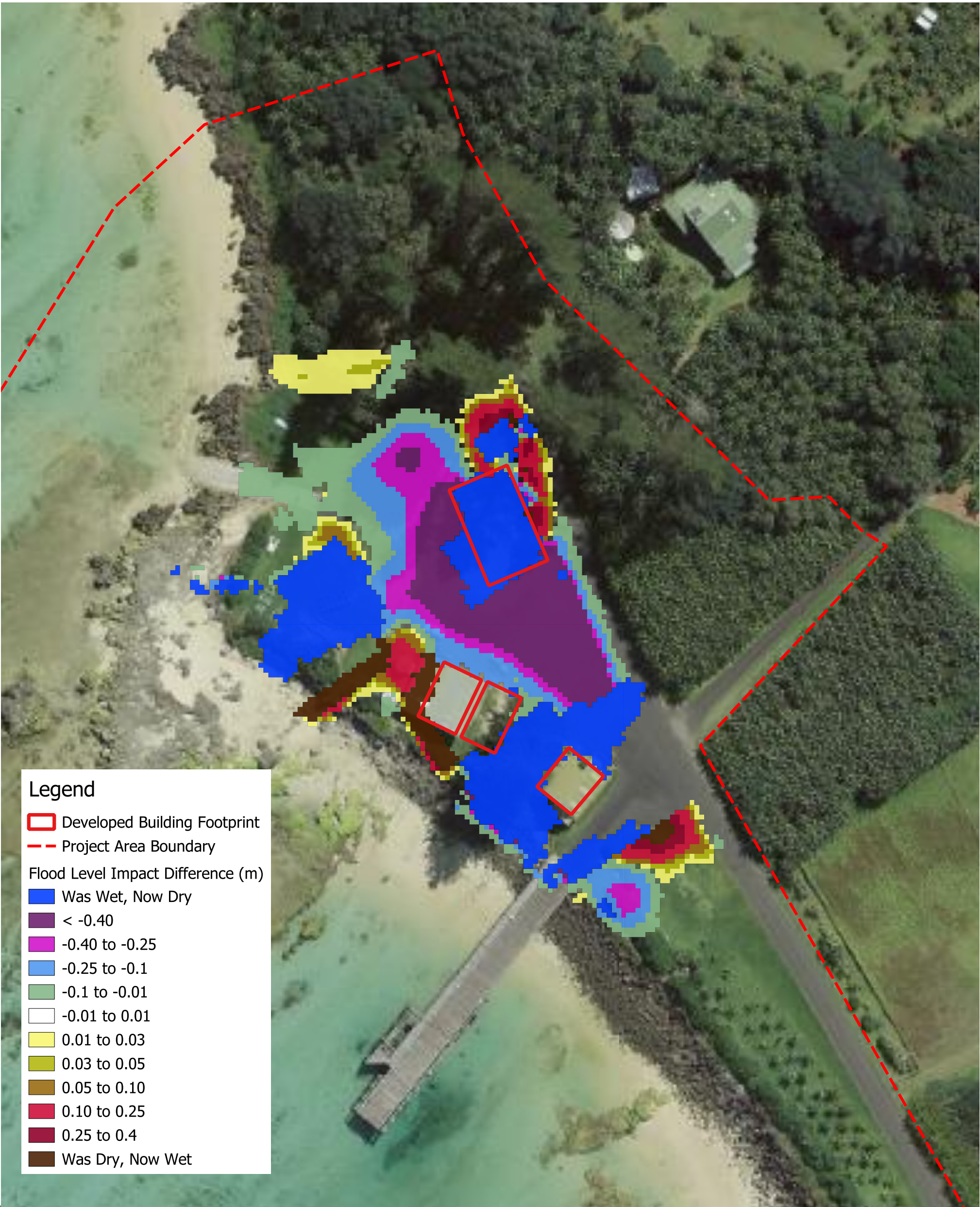
0.05 to 0.10

0.10 to 0.25

0.25 to 0.4

Was Dry, Now Wet

FIGURE TITLE		Impact Difference - 5% AEP Design Flood - Impact Difference		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149	
DRAWING NO.		D1.2		SCALE	1:750 at A3		
PROJECT NO.		30013573A	PROJECT TITLE Lord Howe Island Critical Infrastructure Program				
CREATED BY		M. PERERA	SOURCES		ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m N PAGE SIZEA3



Legend

- Developed Building Footprint
- Project Area Boundary
- Flood Level Impact Difference (m)
 - Was Wet, Now Dry
 - < -0.40
 - 0.40 to -0.25
 - 0.25 to -0.1
 - 0.1 to -0.01
 - 0.01 to 0.01
 - 0.01 to 0.03
 - 0.03 to 0.05
 - 0.05 to 0.10
 - 0.10 to 0.25
 - 0.25 to 0.4
 - Was Dry, Now Wet

FIGURE TITLE		Impact Difference - 1% AEP Design Flood - Impact Difference		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		D1.3		SCALE	1:750 at A3	
PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		01020304050 m PAGE SIZEA3

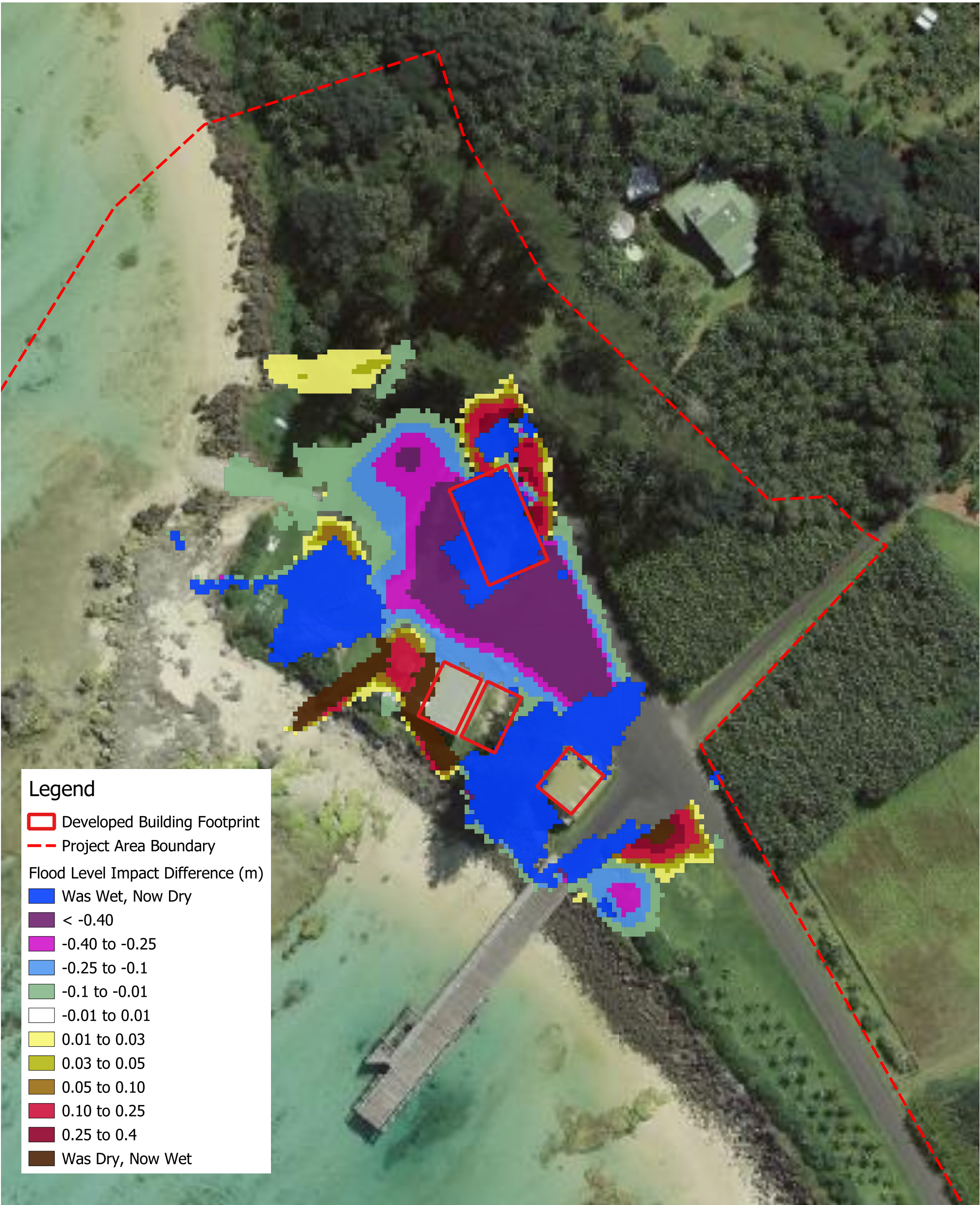
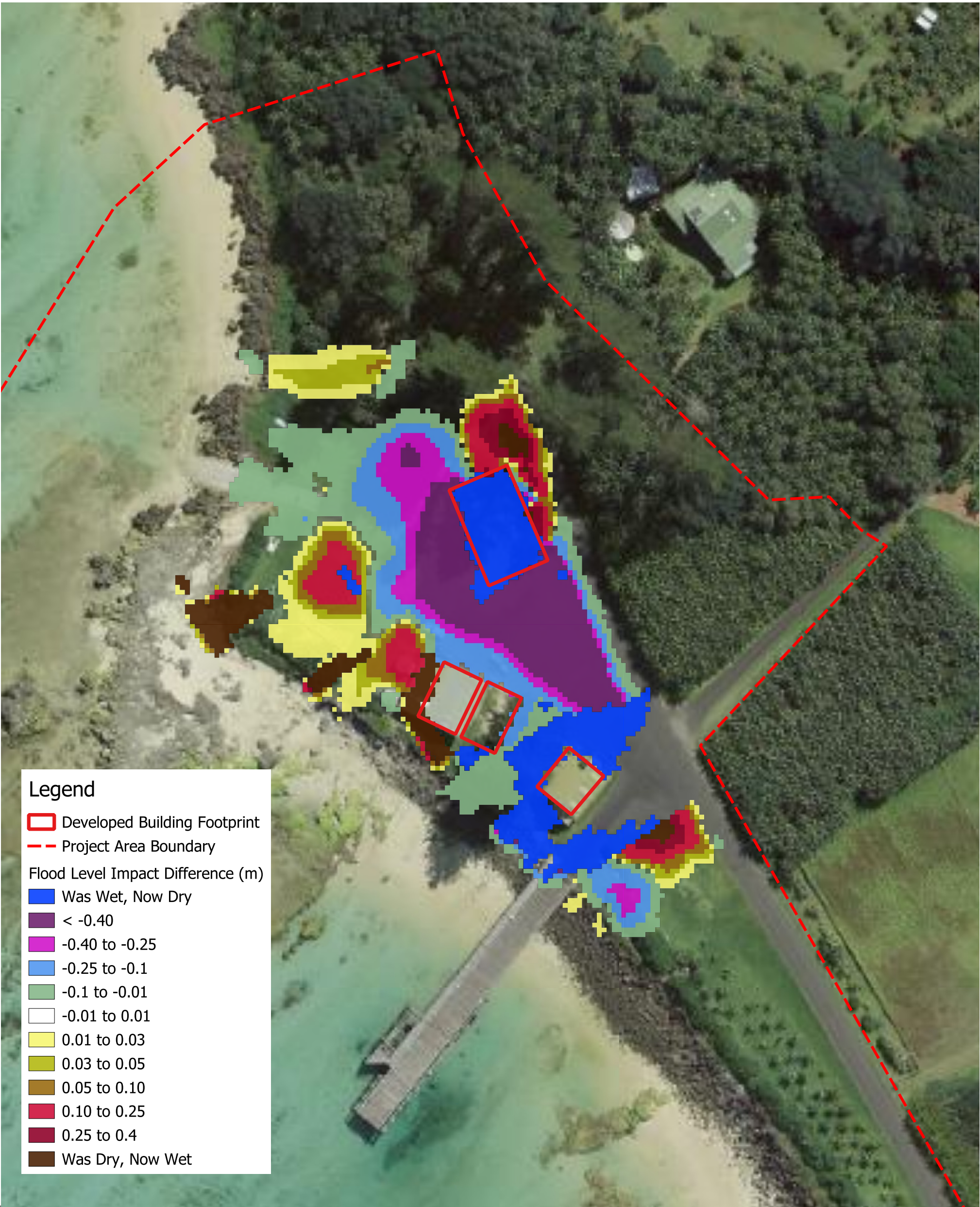


FIGURE TITLE		Impact Difference - 1 + Climate Change% AEP		DATE	10-09-2025		© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		D1.4		SCALE	1:750 at A3		
PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program			
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)			01020304050 m  PAGE SIZE A3



Legend

- Developed Building Footprint
- Project Area Boundary
- Flood Level Impact Difference (m)
 - Was Wet, Now Dry
 - < -0.40
 - 0.40 to -0.25
 - 0.25 to -0.1
 - 0.1 to -0.01
 - 0.01 to 0.01
 - 0.01 to 0.03
 - 0.03 to 0.05
 - 0.05 to 0.10
 - 0.10 to 0.25
 - 0.25 to 0.4
 - Was Dry, Now Wet

FIGURE TITLE		Impact Difference - PMF% AEP Design Flood - Impact Difference		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		D1.5		SCALE	1:750 at A3	
PROJECT NO.		30013573A	PROJECT TITLE Lord Howe Island Critical Infrastructure Program			
CREATED BY		M. PERERA	SOURCES		ESRI (PROJ: GDA1994 MGA Zone 57)	01020304050 m  PAGE SIZEA3

Appendix D

South Model Baseline Flood Mapping



Legend

Existing Building Footprint

Project Area Boundary

1m Flood Level Contours

Peak Water Depth (m)

0.00 to 0.10

0.10 to 0.30

0.30 to 0.50

0.50 to 0.70

0.70 to 1.00

1.00 to 1.50

> 1.50

FIGURE TITLE	Peak Water Depth - 20% AEP Design Flood - Existing Scenario	DATE	10-09-2025
DRAWING NO.	E1.1	SCALE	1:1800 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)

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A3

Filepath: Z:\TUFLOW_Projects\12_ 30013573 - Lord Howe Island\02 QGIS\05 Workspaces\Lord Howe Island_T11.qgz



Legend

Existing Building Footprint

Project Area Boundary

1m Flood Level Contours

Peak Water Depth (m)

0.00 to 0.10

0.10 to 0.30

0.30 to 0.50

0.50 to 0.70

0.70 to 1.00

1.00 to 1.50

> 1.50

FIGURE TITLE	Peak Water Depth - 5% AEP Design Flood - Existing Scenario	DATE	10-09-2025
DRAWING NO.	E1.2	SCALE	1:1800 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)

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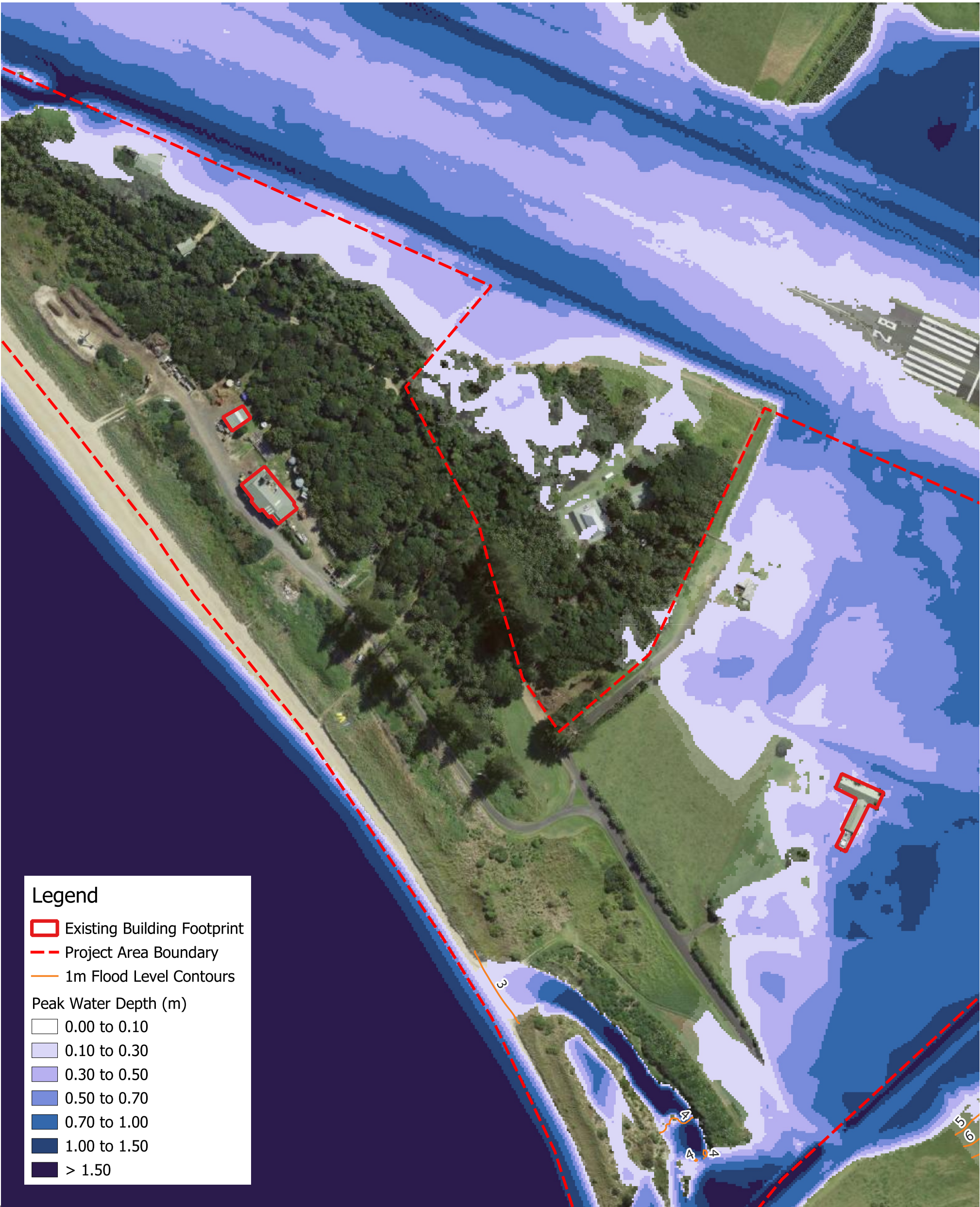
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FIGURE TITLE		Peak Water Depth - 1% AEP Design Flood - Existing Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		E1.3		SCALE	1:1800 at A3	
PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		020406080100 m   PAGE SIZEA3



FIGURE TITLE		Peak Water Depth - 1 + Climate Change% AEP		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		E1.4		SCALE	1:1800 at A3	
PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		020406080100 m   PAGE SIZEA3



Legend

Existing Building Footprint

Project Area Boundary

1m Flood Level Contours

Peak Water Depth (m)

0.00 to 0.10

0.10 to 0.30

0.30 to 0.50

0.50 to 0.70

0.70 to 1.00

1.00 to 1.50

> 1.50

FIGURE TITLE	Peak Water Depth - PMF% AEP Design Flood - Existing Scenario	DATE	10-09-2025
DRAWING NO.	E1.5	SCALE	1:1800 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)

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Legend

Existing Building Footprint

Project Area Boundary

Peak Velocity (m/s)

< 0.5

0.5 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 3.0

> 3.0

FIGURE TITLE	Peak Velocity - 20% AEP Design Flood - Existing Scenario	DATE	10-09-2025
DRAWING NO.	E2.1	SCALE	1:1800 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)

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Legend

Existing Building Footprint

Project Area Boundary

Peak Velocity (m/s)

< 0.5

0.5 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 3.0

> 3.0

FIGURE TITLE	Peak Velocity - 5% AEP Design Flood - Existing Scenario	DATE	10-09-2025
DRAWING NO.	E2.2	SCALE	1:1800 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)

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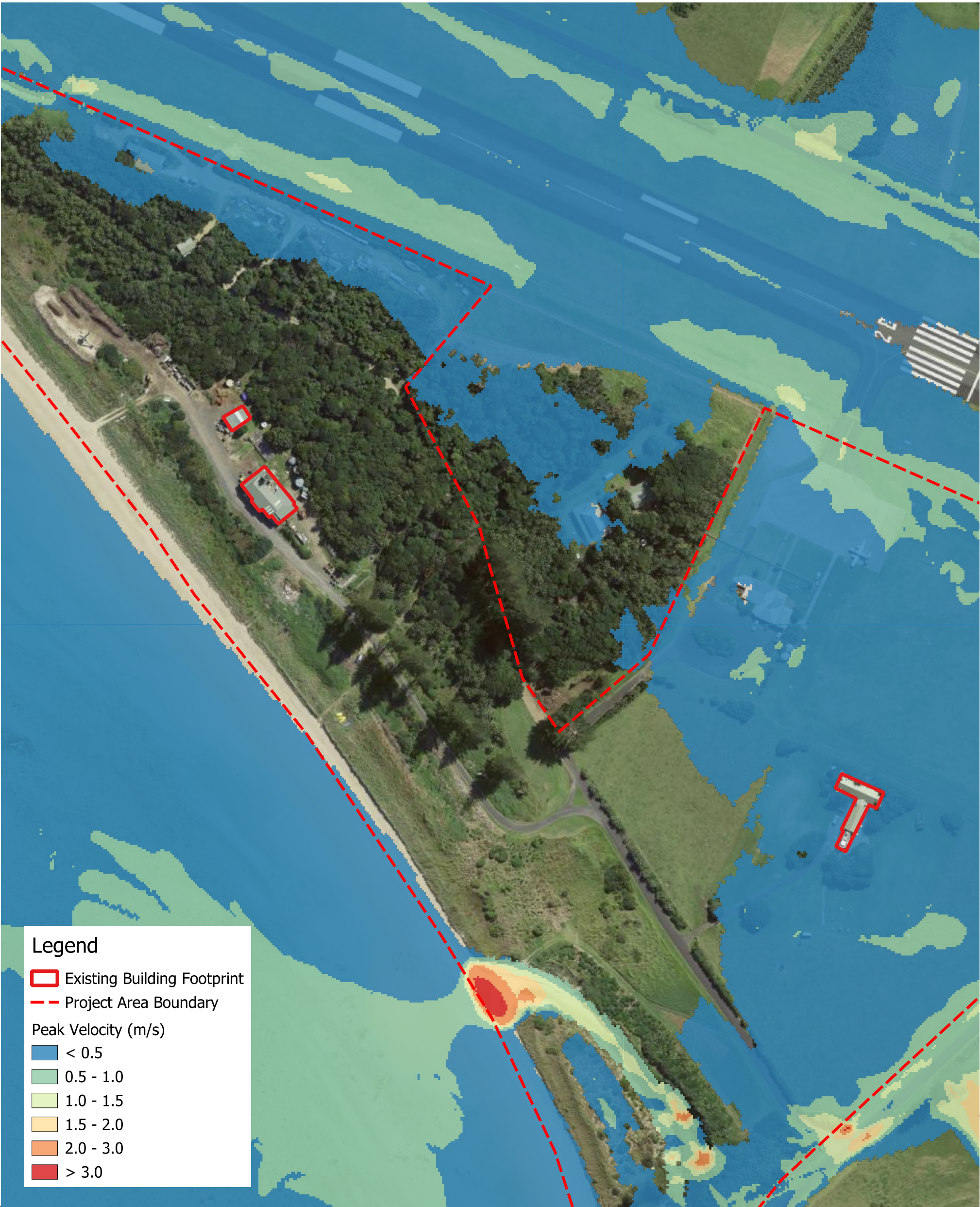
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Legend

Existing Building Footprint

Project Area Boundary

Peak Velocity (m/s)

< 0.5

0.5 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 3.0

> 3.0

FIGURE TITLE	Peak Velocity - PMF% AEP Design Flood - Existing Scenario	DATE	10-09-2025
DRAWING NO.	E2.5	SCALE	1:1800 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)

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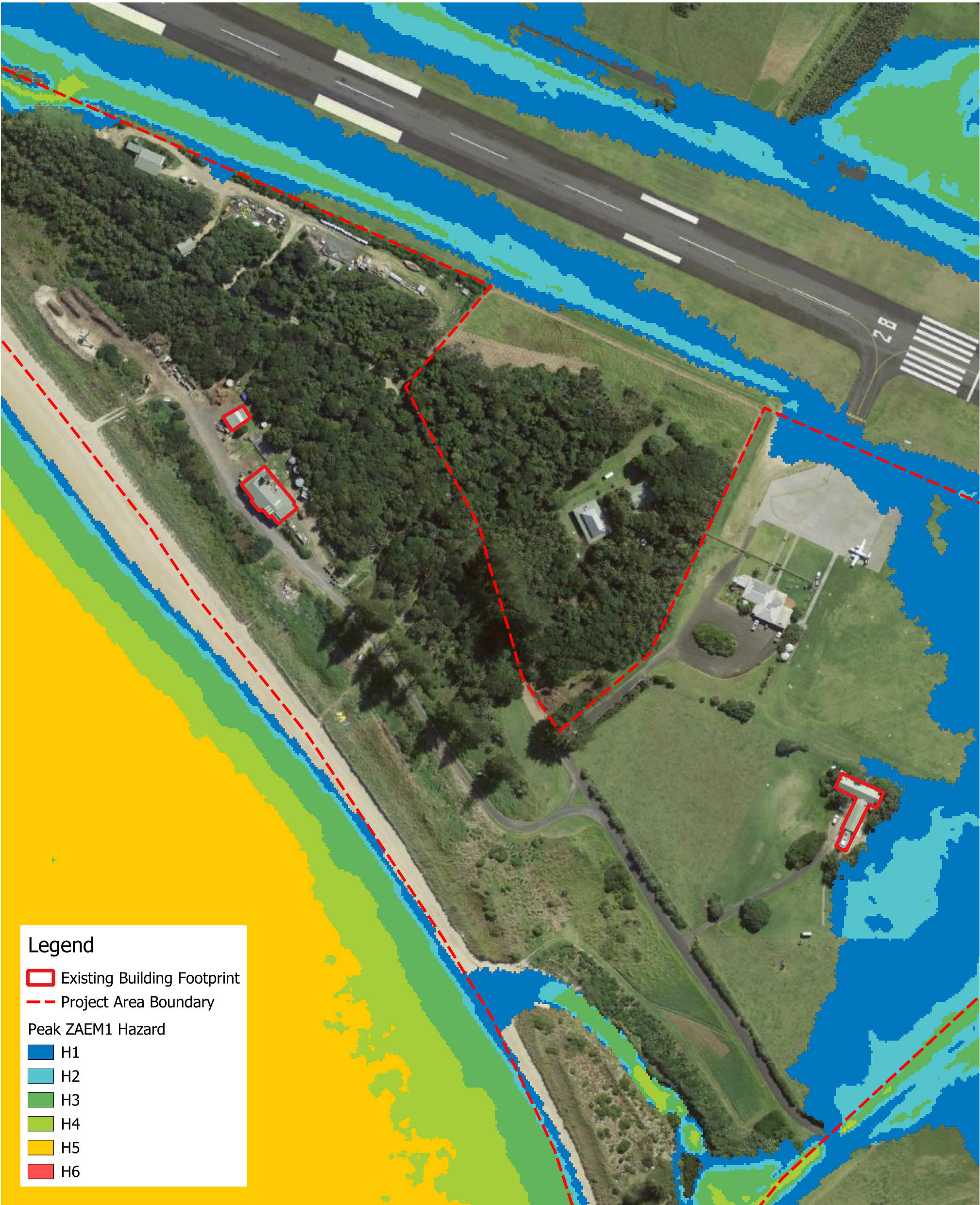
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Legend

- Existing Building Footprint
- Project Area Boundary
- Peak ZAEM1 Hazard
 - H1
 - H2
 - H3
 - H4
 - H5
 - H6

FIGURE TITLE	Peak Hazard - 20% AEP Design Flood - Existing Scenario	DATE	10-09-2025
DRAWING NO.	E3.1	SCALE	1:1800 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)

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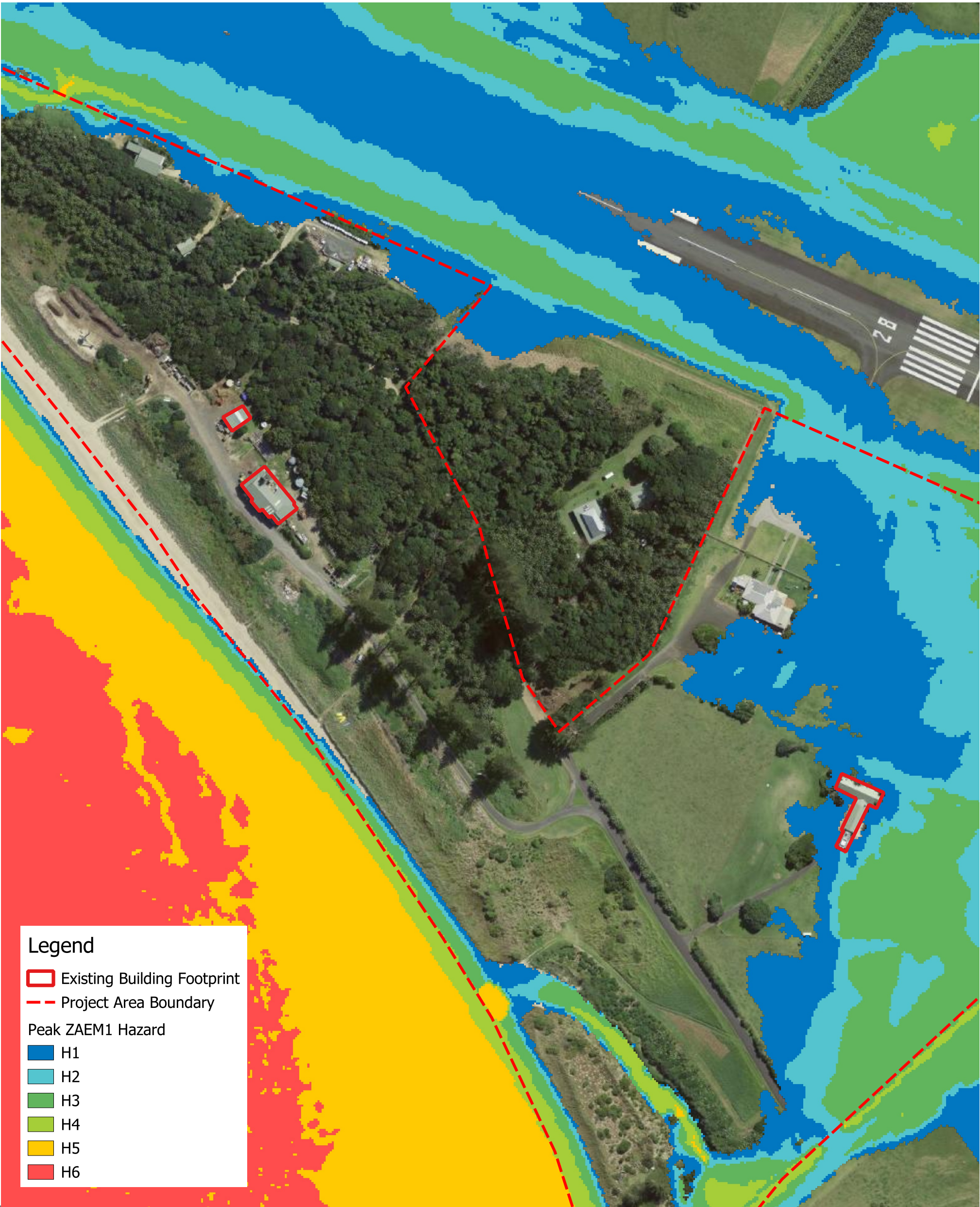
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0 20 40 60 80 100 m

N

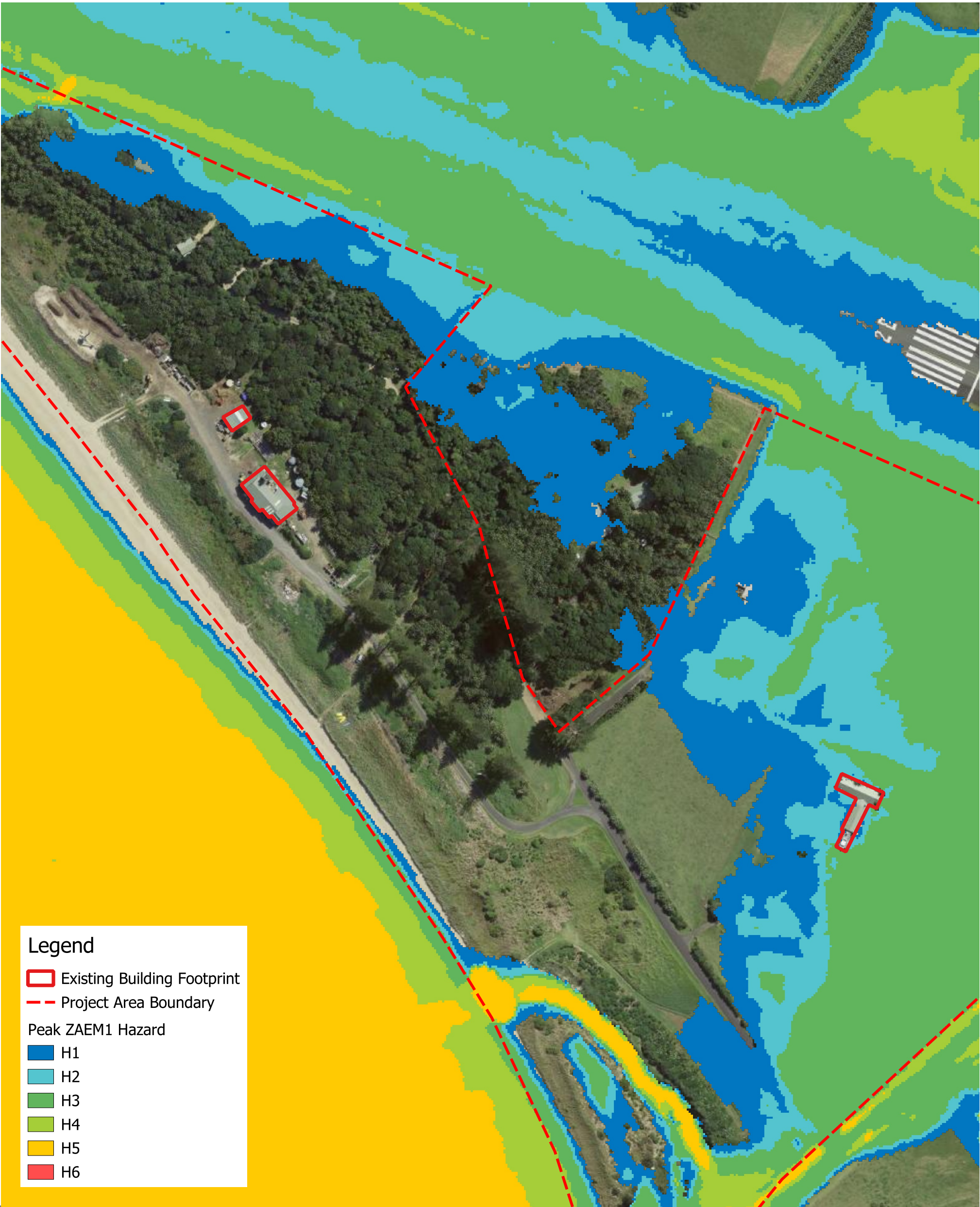
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Legend

- Existing Building Footprint
- Project Area Boundary
- Peak ZAEM1 Hazard
 - H1
 - H2
 - H3
 - H4
 - H5
 - H6

FIGURE TITLE	Peak Hazard - 1 + Climate Change% AEP Design Flood - Existing Scenario	DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document. smec SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.	E3.4	SCALE	1:1800 at A3	
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program	
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)	020406080100 m N PAGE SIZEA3



Legend

Existing Building Footprint

Project Area Boundary

Peak ZAEM1 Hazard

H1

H2

H3

H4

H5

H6

FIGURE TITLE		Peak Hazard - PMF% AEP Design Flood - Existing Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		E3.5		SCALE	1:1800 at A3	
PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		020406080100 m   PAGE SIZEA3



Legend

Existing Building Footprint

Project Area Boundary

1% AEP Flood Fringe

1% AEP Flood Storage

1% AEP Floodway

FIGURE TITLE	Flood Function - 1% AEP Design Flood - Existing Scenario		DATE	10-09-2025
DRAWING NO.	E4.1		SCALE	1:1800 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program	
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)	

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Appendix E

South Model Developed Flood Mapping



FIGURE TITLE		Peak Water Depth - 20% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		F1.1		SCALE	1:1800 at A3	
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program			
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		020406080100 m  PAGE SIZEA3



Legend

Developed Building Footprint

Project Area Boundary

1m Flood Level Contours

Peak Water Depth (m)

0.00 to 0.10

0.10 to 0.30

0.30 to 0.50

0.50 to 0.70

0.70 to 1.00

1.00 to 1.50

> 1.50

FIGURE TITLE	Peak Water Depth - 5% AEP Design Flood - Developed Scenario	DATE	10-09-2025
DRAWING NO.	F1.2	SCALE	1:1800 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)

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FIGURE TITLE		Peak Water Depth - 1% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
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PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		020406080100 m   PAGE SIZEA3

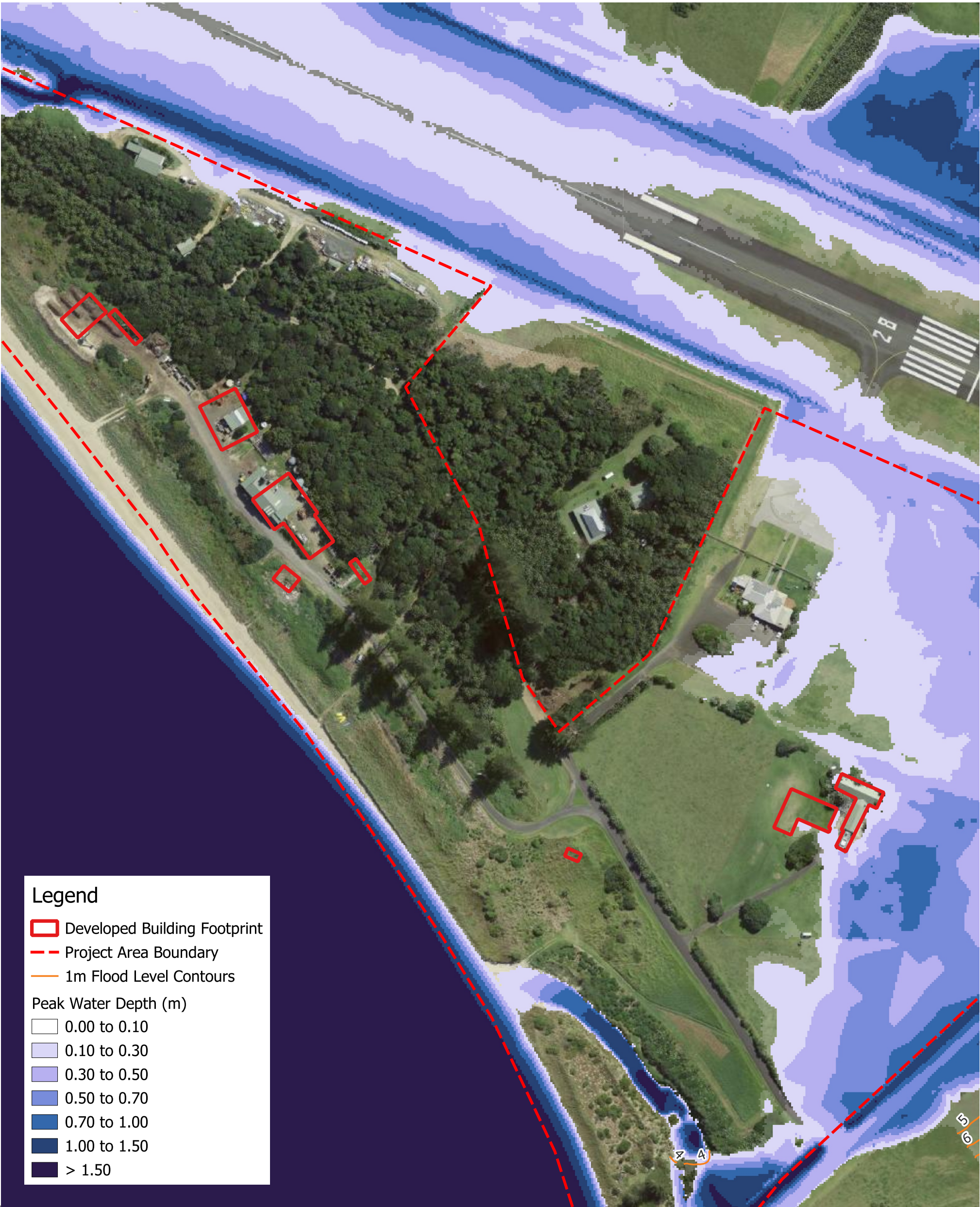
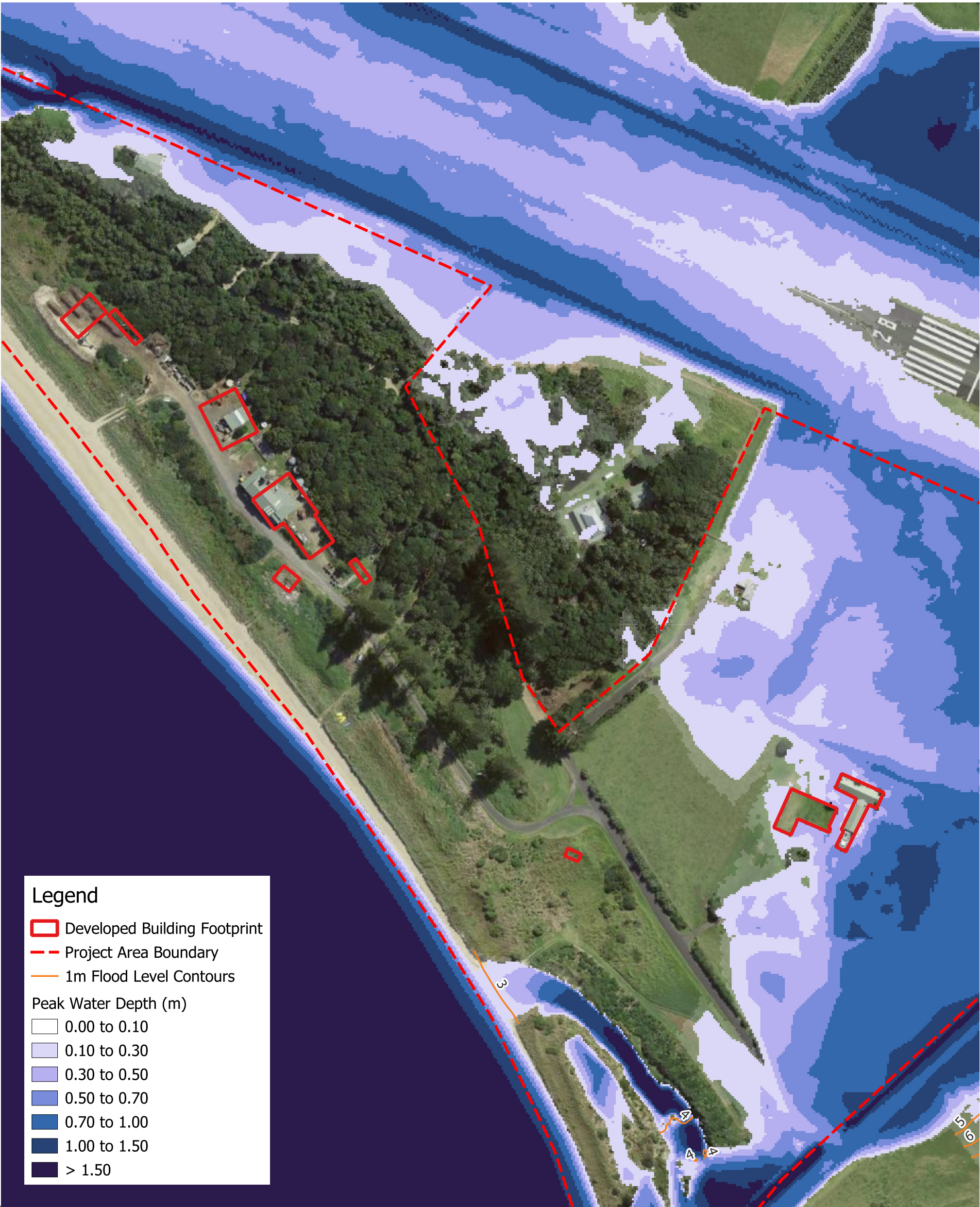


FIGURE TITLE Peak Water Depth - 1 + Climate Change% AEP Design Flood - Developed Scenario		DATE 10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO. F1.4		SCALE 1:1800 at A3	
PROJECT NO. 30013573A	PROJECT TITLE Lord Howe Island Critical Infrastructure Program		
CREATED BY M. PERERA	SOURCES ESRI (PROJ: GDA1994 MGA Zone 57)	020406080100 m  PAGE SIZE A3	



Legend

Developed Building Footprint

Project Area Boundary

1m Flood Level Contours

Peak Water Depth (m)

0.00 to 0.10

0.10 to 0.30

0.30 to 0.50

0.50 to 0.70

0.70 to 1.00

1.00 to 1.50

> 1.50

FIGURE TITLE	Peak Water Depth - PMF% AEP Design Flood - Developed Scenario	DATE	10-09-2025
DRAWING NO.	F1.5	SCALE	1:1800 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)

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Legend

Developed Building Footprint

Project Area Boundary

Peak Velocity (m/s)

< 0.5

0.5 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 3.0

> 3.0

FIGURE TITLE	Peak Velocity - 20% AEP Design Flood - Developed Scenario	DATE	10-09-2025
DRAWING NO.	F2.1	SCALE	1:1800 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)

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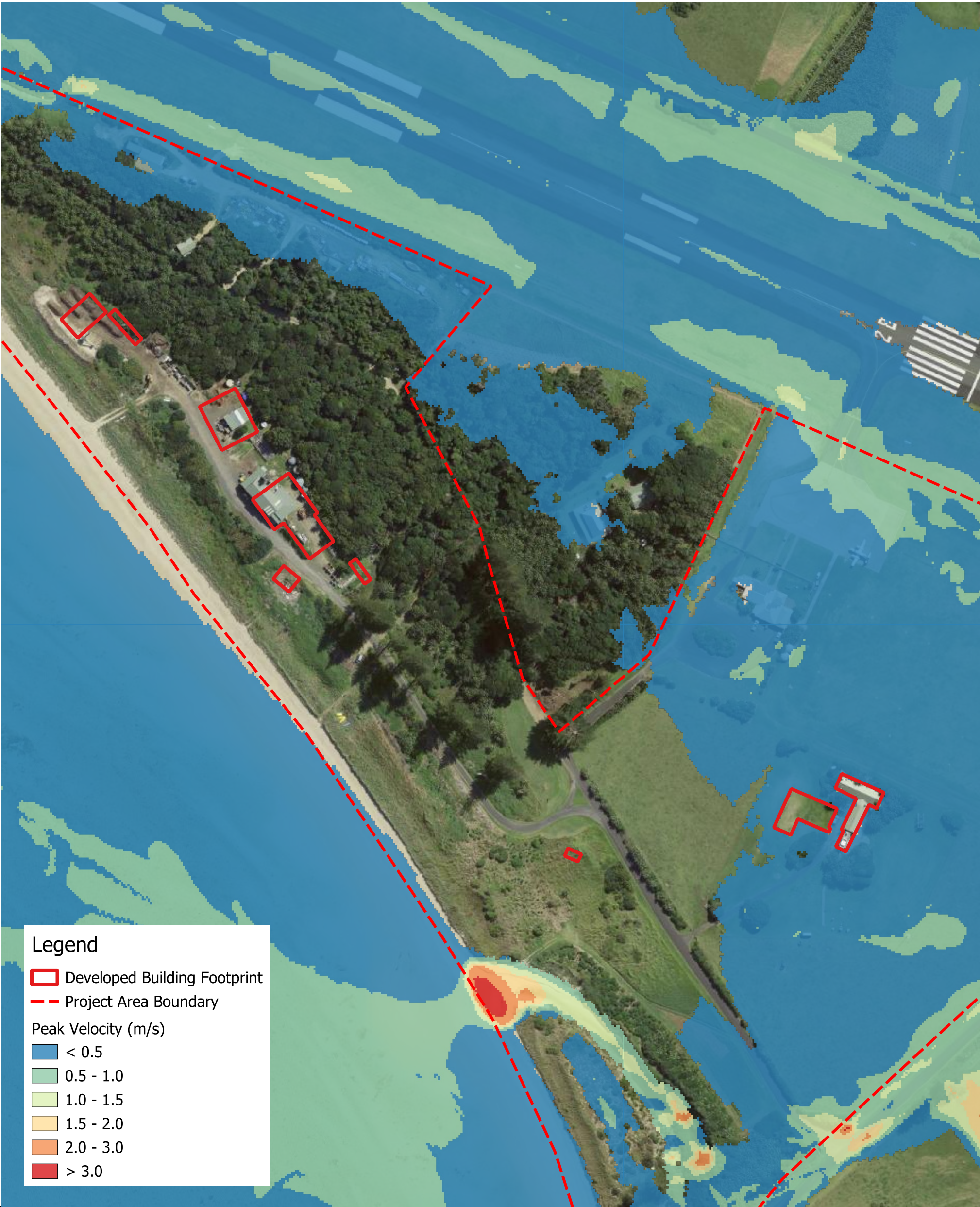
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FIGURE TITLE		Peak Velocity - 5% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		F2.2		SCALE	1:1800 at A3	
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program			
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)			020406080100 m   PAGE SIZEA3



Legend

Developed Building Footprint

Project Area Boundary

Peak Velocity (m/s)

< 0.5

0.5 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 3.0

> 3.0

FIGURE TITLE	Peak Velocity - PMF% AEP Design Flood - Developed Scenario	DATE	10-09-2025
DRAWING NO.	F2.5	SCALE	1:1800 at A3
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)

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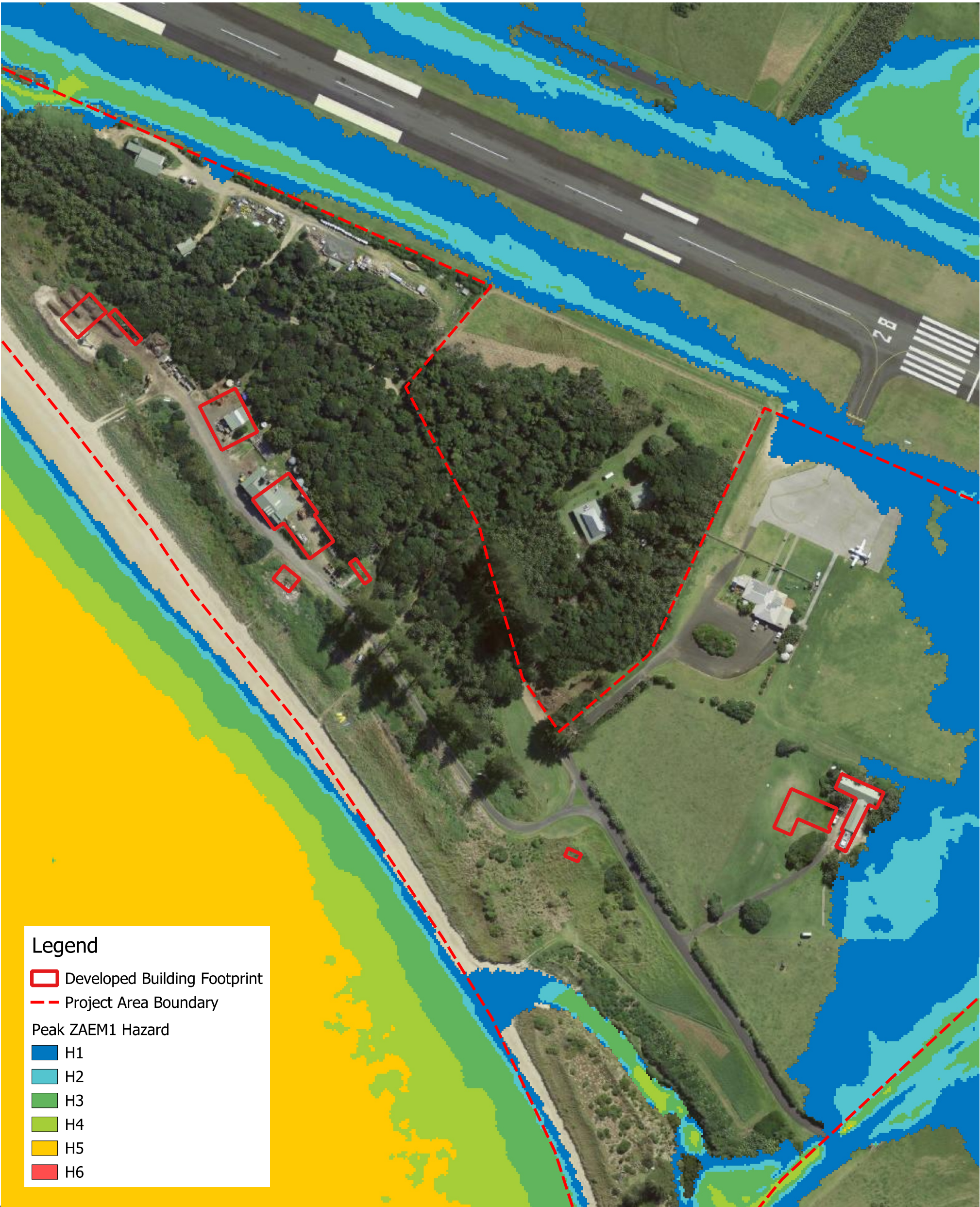
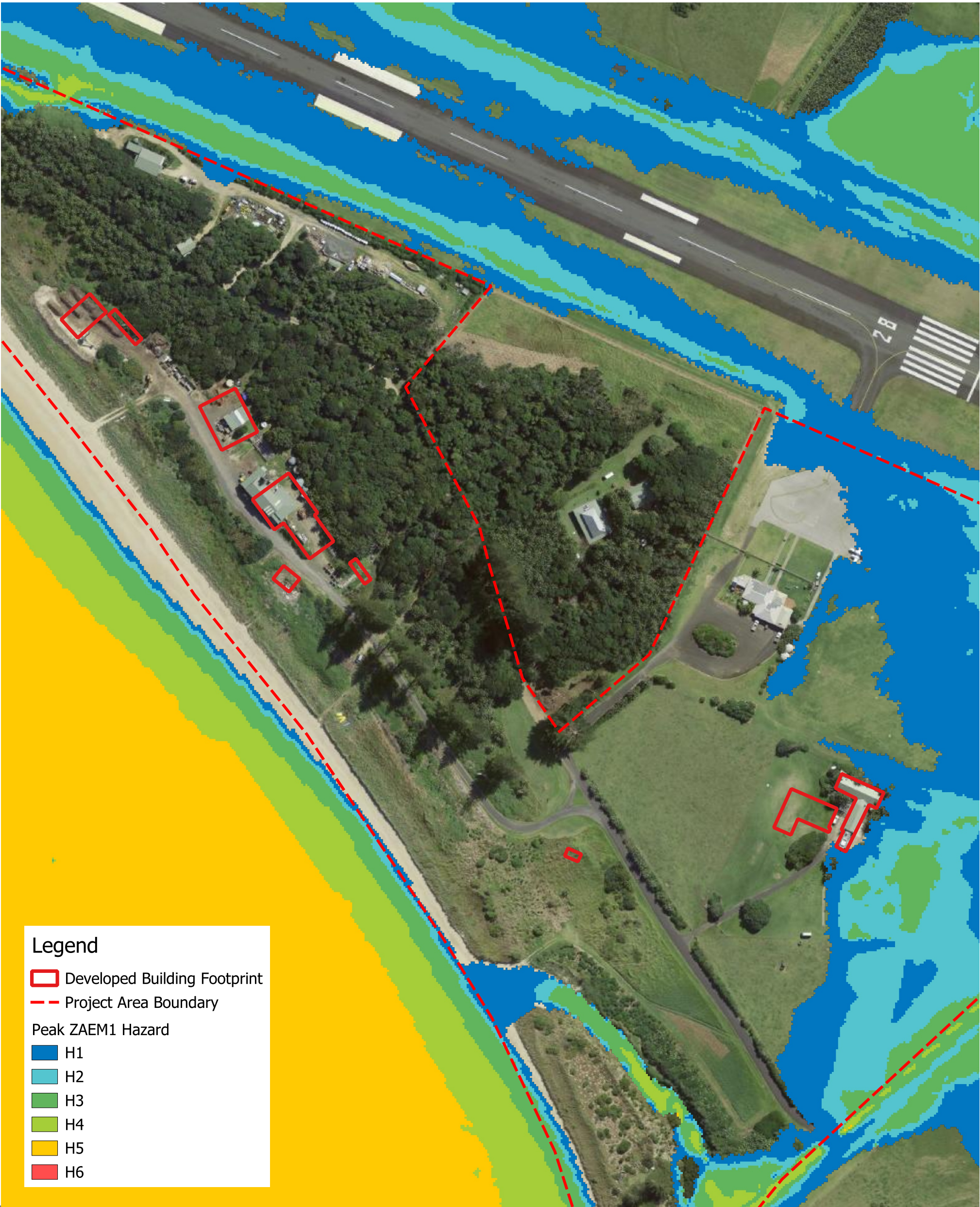


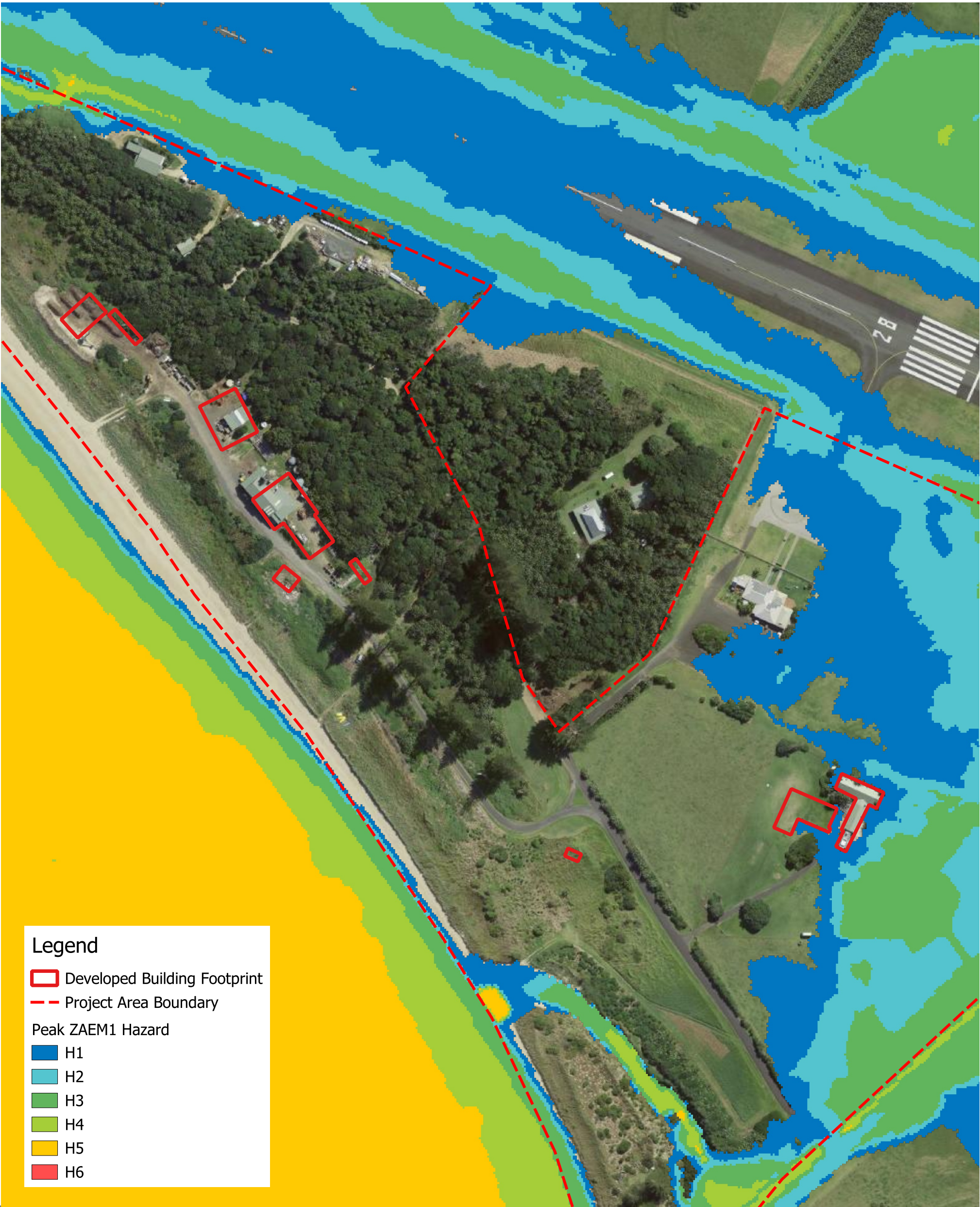
FIGURE TITLE		Peak Hazard - 20% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
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PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program			
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		020406080100 m   PAGE SIZEA3



Legend

- Developed Building Footprint
- Project Area Boundary
- Peak ZAEM1 Hazard
 - H1
 - H2
 - H3
 - H4
 - H5
 - H6

FIGURE TITLE		Peak Hazard - 5% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		F3.2		SCALE	1:1800 at A3	
PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		020406080100 m  PAGE SIZEA3



Legend

Developed Building Footprint

Project Area Boundary

Peak ZAEM1 Hazard

H1

H2

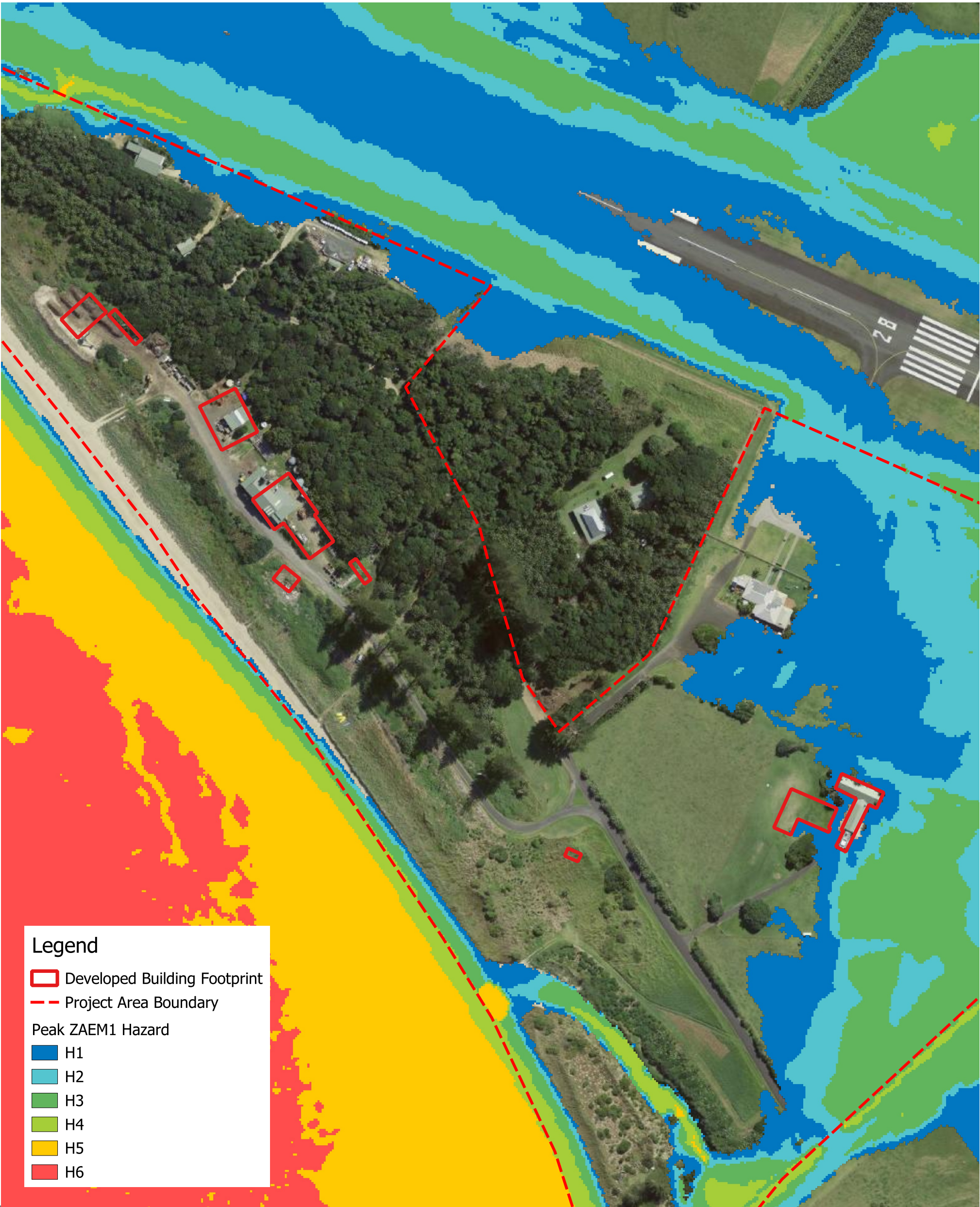
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H4

H5

H6

FIGURE TITLE		Peak Hazard - 1% AEP Design Flood - Developed Scenario		DATE		10-09-2025		© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
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PROJECT NO.		30013573A		PROJECT TITLE		Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA		SOURCES		ESRI (PROJ: GDA1994 MGA Zone 57)		020406080100 m   PAGE SIZEA3



Legend

Developed Building Footprint

Project Area Boundary

Peak ZAEM1 Hazard

H1

H2

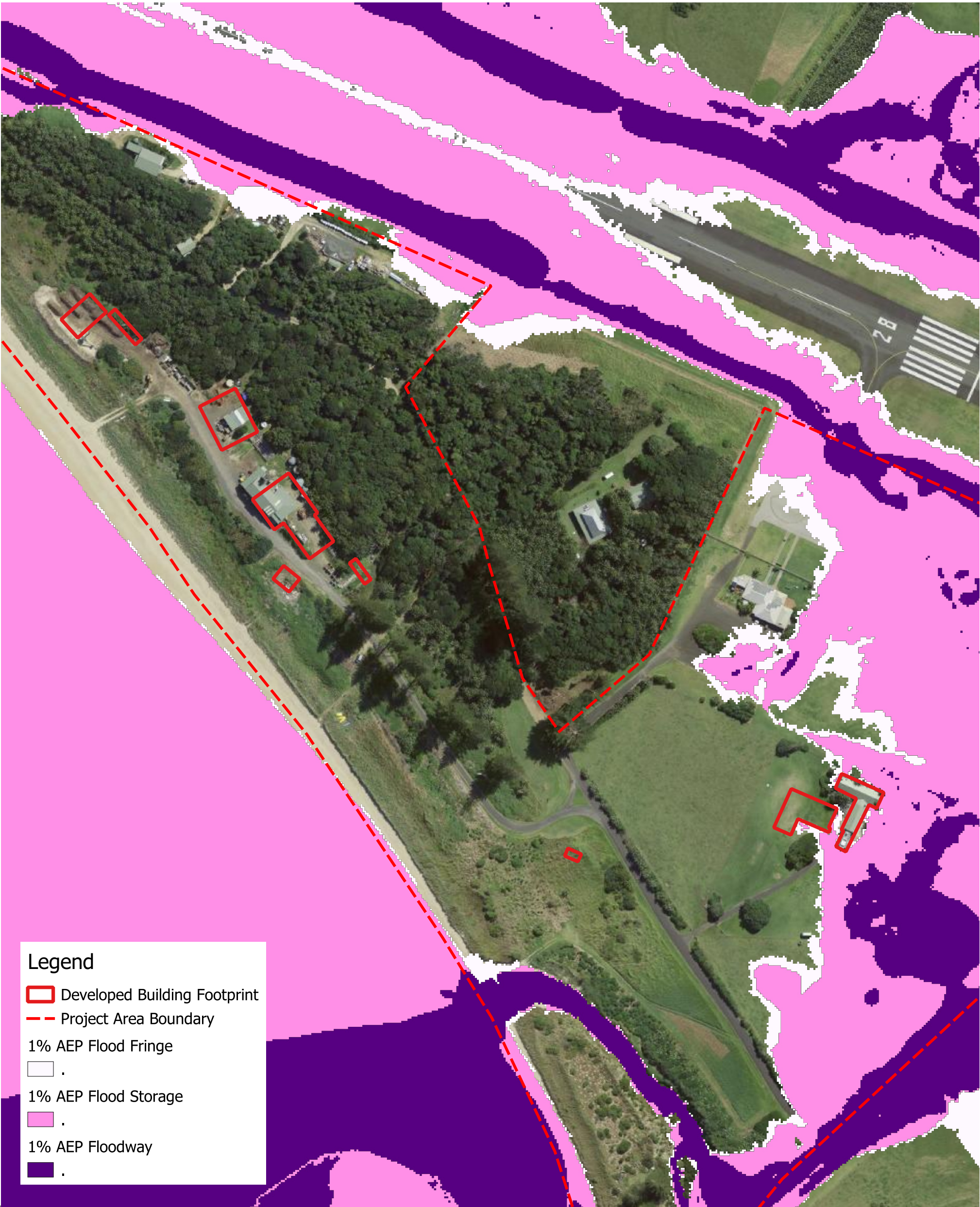
H3

H4

H5

H6

FIGURE TITLE		Peak Hazard - 1 + Climate Change% AEP Design Flood - Developed Scenario		DATE	10-09-2025		© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149	
DRAWING NO.		F3.4		SCALE	1:1800 at A3			
PROJECT NO.		30013573A		PROJECT TITLE		Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA		SOURCES		ESRI (PROJ: GDA1994 MGA Zone 57)		020406080100 m   PAGE SIZE A3



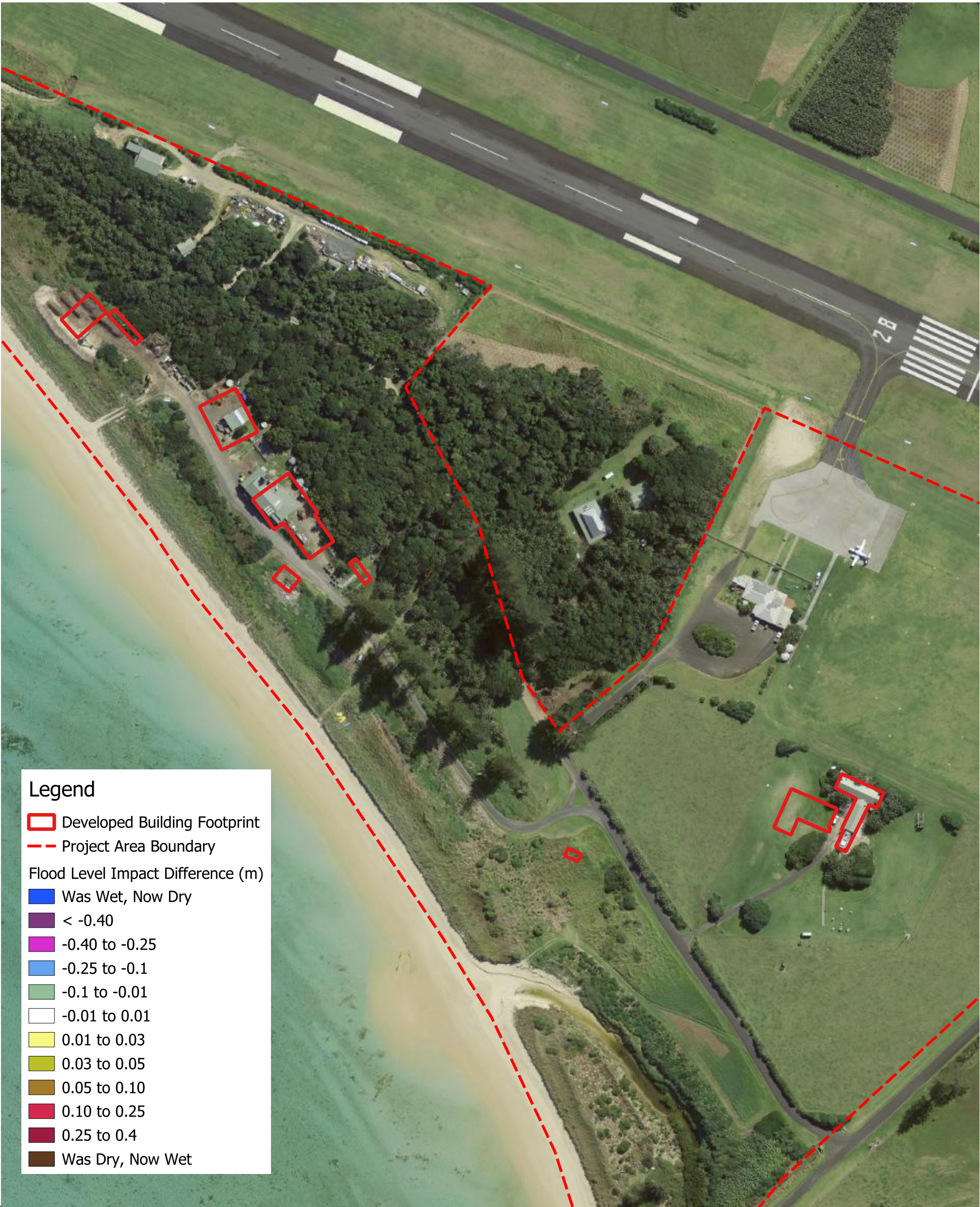
Legend

- Developed Building Footprint
- Project Area Boundary
- 1% AEP Flood Fringe
- .
- 1% AEP Flood Storage
- .
- 1% AEP Floodway
- .

FIGURE TITLE		Flood Function - 1% AEP Design Flood - Developed Scenario		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.		F4.1		SCALE	1:1800 at A3	
PROJECT NO.		30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY		M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		020406080100 m  PAGE SIZEA3

Appendix F

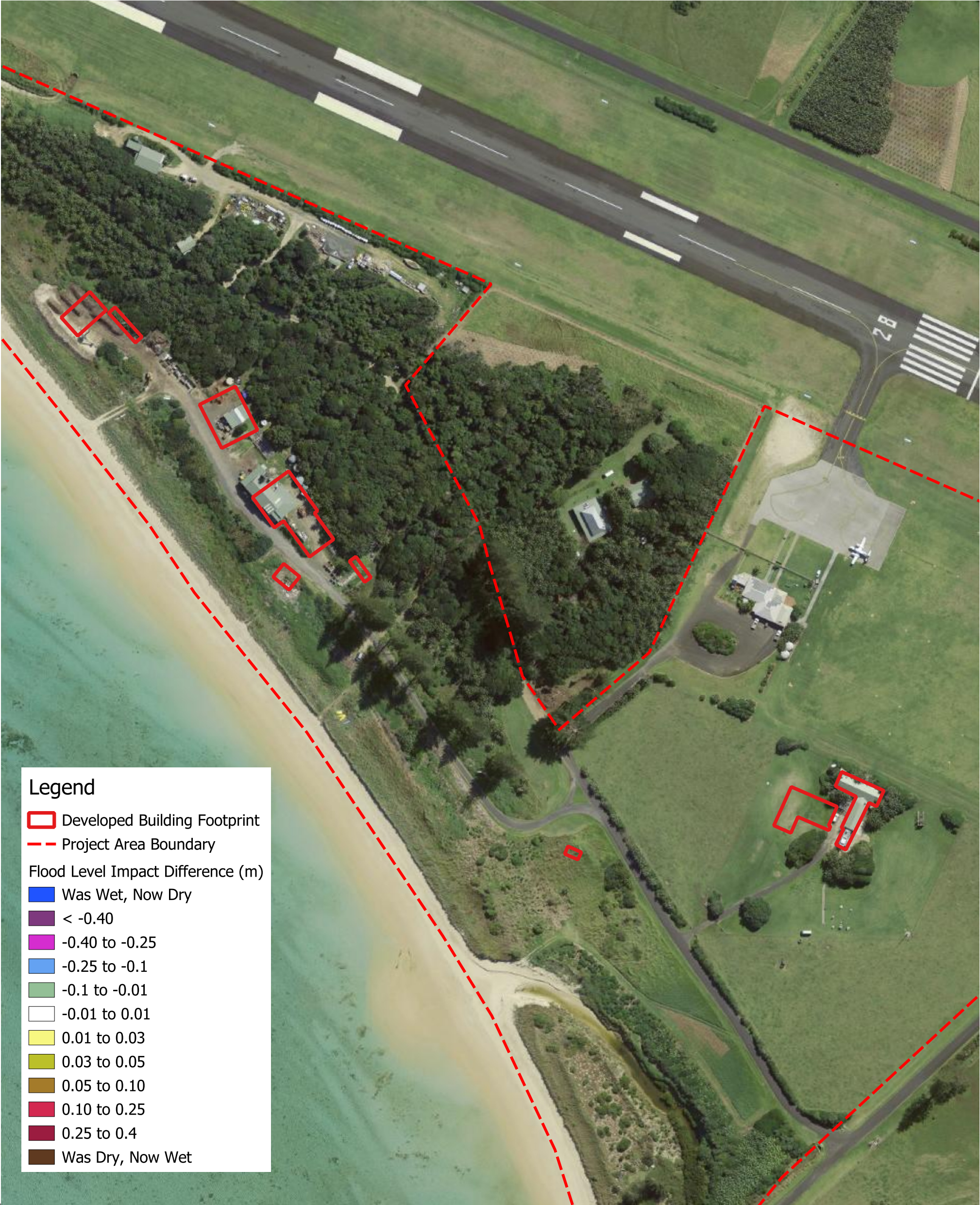
South Model Impact Difference Mapping



Legend

- Developed Building Footprint
- Project Area Boundary
- Flood Level Impact Difference (m)
- Was Wet, Now Dry
- < -0.40
- 0.40 to -0.25
- 0.25 to -0.1
- 0.1 to -0.01
- 0.01 to 0.01
- 0.01 to 0.03
- 0.03 to 0.05
- 0.05 to 0.10
- 0.10 to 0.25
- 0.25 to 0.4
- Was Dry, Now Wet

FIGURE TITLE		Impact Difference - 20% AEP Design Flood - Impact Difference		DATE	10-09-2025		© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149	
DRAWING NO.		G1.1		SCALE	1:1800 at A3			
PROJECT NO.		30013573A	PROJECT TITLE		Lord Howe Island Critical Infrastructure Program			
CREATED BY		M. PERERA		SOURCES		ESRI (PROJ: GDA1994 MGA Zone 57)		020406080100 m  PAGE SIZEA3



Legend

- Developed Building Footprint
- Project Area Boundary
- Flood Level Impact Difference (m)
- Was Wet, Now Dry
- < -0.40
- 0.40 to -0.25
- 0.25 to -0.1
- 0.1 to -0.01
- 0.01 to 0.01
- 0.01 to 0.03
- 0.03 to 0.05
- 0.05 to 0.10
- 0.10 to 0.25
- 0.25 to 0.4
- Was Dry, Now Wet

FIGURE TITLE	Impact Difference - 5% AEP Design Flood - Impact Difference		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.	G1.2		SCALE	1:1800 at A3	
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program		
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)		020406080100 m   PAGE SIZEA3

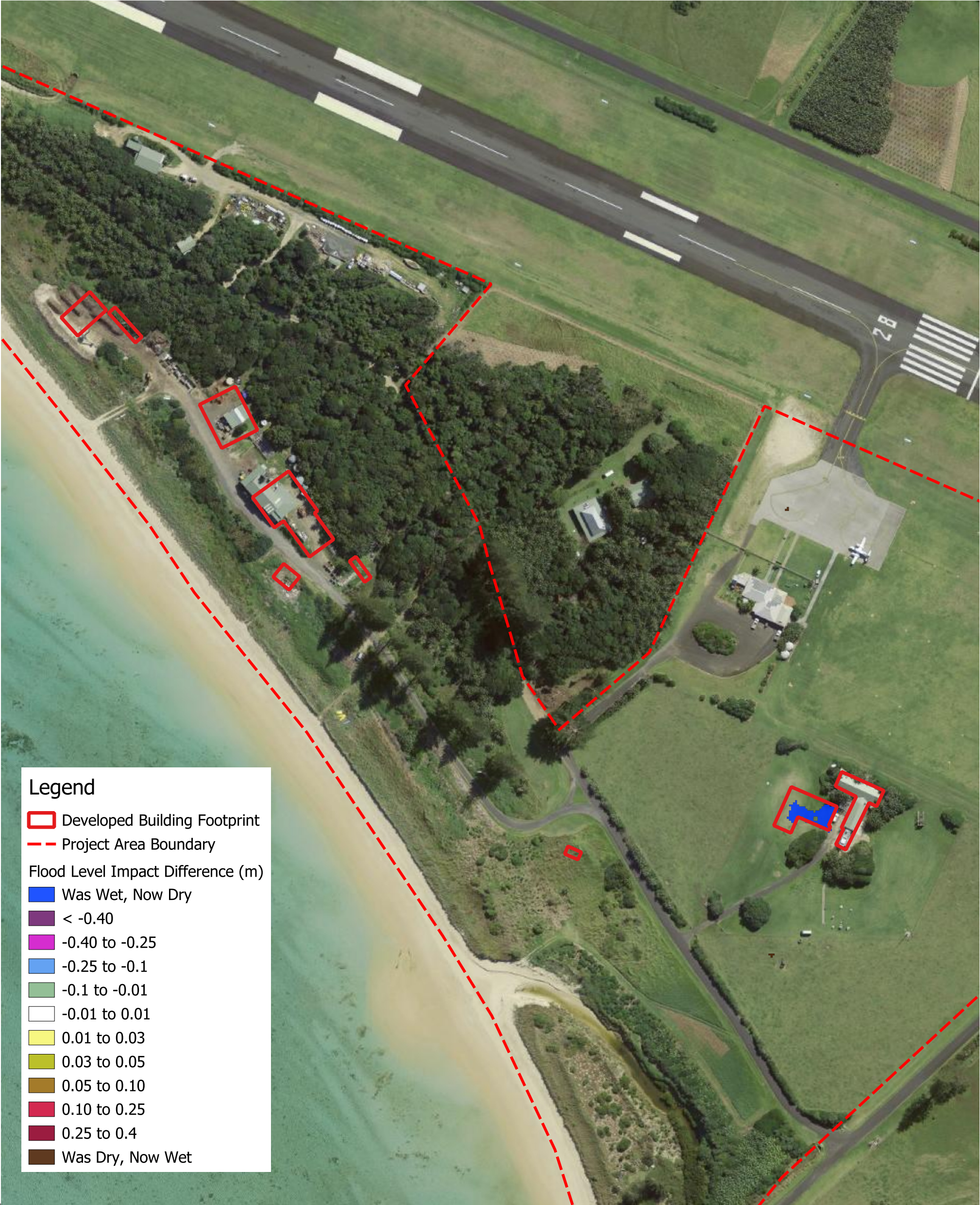
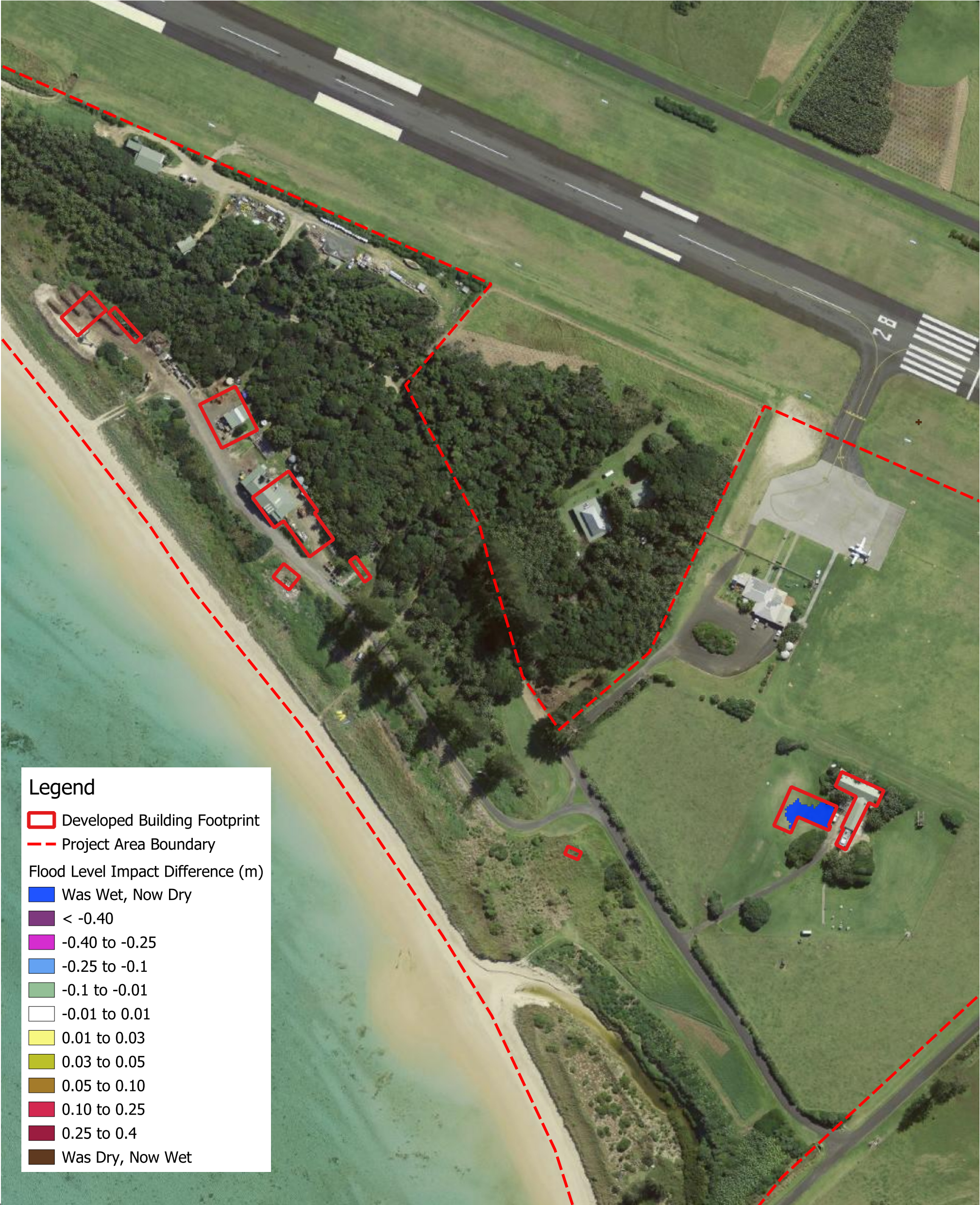


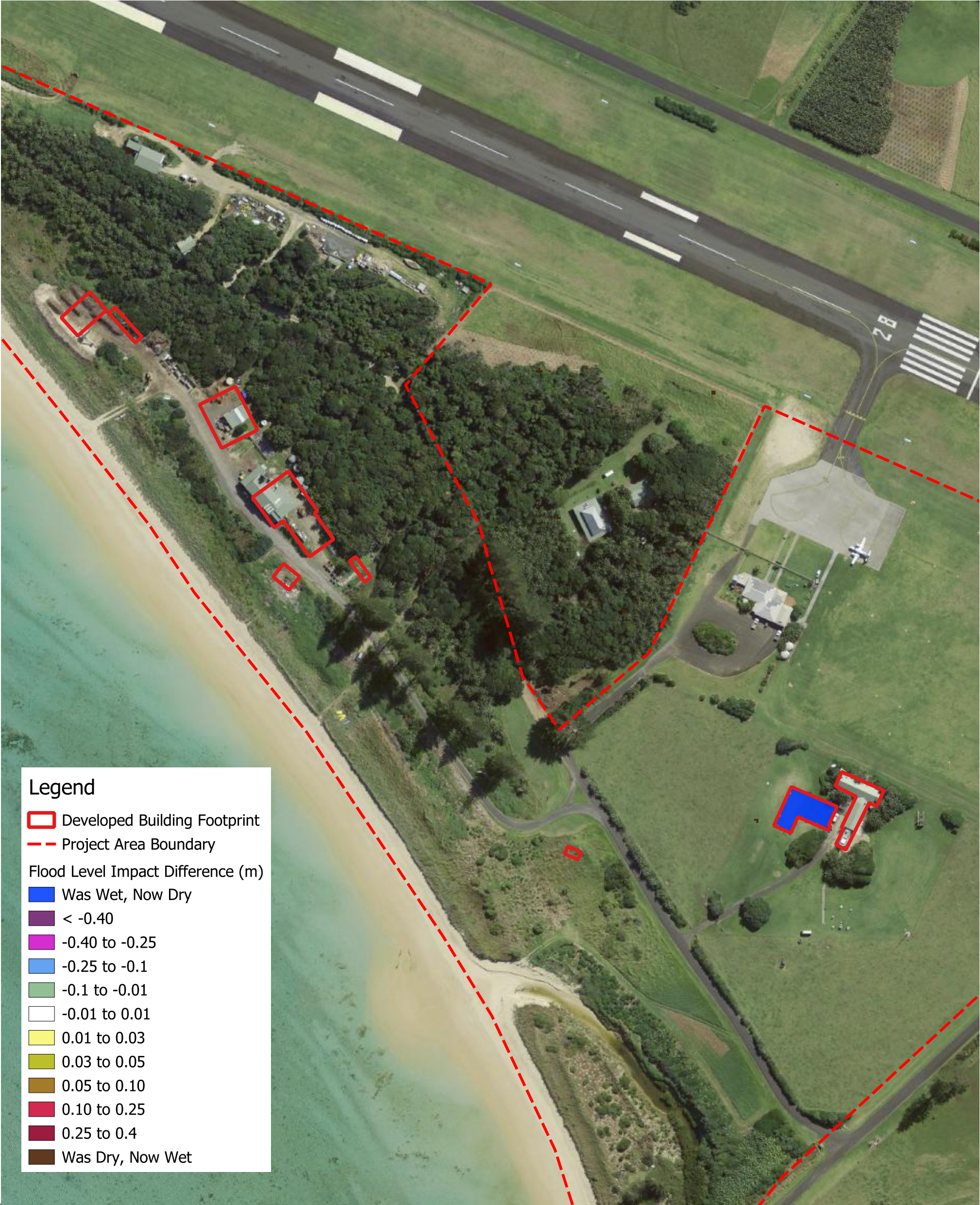
FIGURE TITLE		Impact Difference - 1% AEP Design Flood - Impact Difference		DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document. smec SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
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PROJECT NO.		30013573A	PROJECT TITLE		Lord Howe Island Critical Infrastructure Program	
CREATED BY		M. PERERA	SOURCES		ESRI (PROJ: GDA1994 MGA Zone 57)	020406080100 m N PAGE SIZE A3



Legend

- Developed Building Footprint
- Project Area Boundary
- Flood Level Impact Difference (m)
- Was Wet, Now Dry
- < -0.40
- 0.40 to -0.25
- 0.25 to -0.1
- 0.1 to -0.01
- 0.01 to 0.01
- 0.01 to 0.03
- 0.03 to 0.05
- 0.05 to 0.10
- 0.10 to 0.25
- 0.25 to 0.4
- Was Dry, Now Wet

FIGURE TITLE	Impact Difference - 1 + Climate Change% AEP	DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document. smec SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.	G1.4	SCALE	1:1800 at A3	
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program	
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)	020406080100 m N PAGE SIZEA3



Legend

- Developed Building Footprint
- Project Area Boundary
- Flood Level Impact Difference (m)
- Was Wet, Now Dry
- < -0.40
- 0.40 to -0.25
- 0.25 to -0.1
- 0.1 to -0.01
- 0.01 to 0.01
- 0.01 to 0.03
- 0.03 to 0.05
- 0.05 to 0.10
- 0.10 to 0.25
- 0.25 to 0.4
- Was Dry, Now Wet

FIGURE TITLE	Impact Difference - PMF% AEP Design Flood - Impact Difference	DATE	10-09-2025	© SMEC Australia Pty Ltd 2021. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document. smec SMEC AUSTRALIA PTY LTD ABN 47 065 475 149
DRAWING NO.	G1.5	SCALE	1:1800 at A3	
PROJECT NO.	30013573A	PROJECT TITLE	Lord Howe Island Critical Infrastructure Program	
CREATED BY	M. PERERA	SOURCES	ESRI (PROJ: GDA1994 MGA Zone 57)	020406080100 m N PAGE SIZEA3

Appendix G

Proposed Buildings Plans & Finished Floor Levels

[illegible]

[illegible]



1 GROUND FLOOR PLAN - NORTH ZONE (OLD CARGO SHED)
1:100

LEGEND			
NOTES - REFER TO FINISHES SCHEDULE FOR DETAILED FINISHES DESCRIPTIONS			
DB	DOOR TYPE	FCL	FINISH FLOOR LEVEL
PC	WALL FINISH CODE	RL	FINISHED CEILING LEVEL
CON	NUMBER INDICATES HEIGHT	FW	FLOOR WASTE
N	FLOOR FINISH CODE	B	BOLLARD
	SKIRTING FINISH CODE	DP	DOWN PIPES
		GD	GRATED DRAIN
		GR	GUARD RAIL
FINISHES CODES			
AFG	ALUMINIUM FIXED GLASS	MC-01	METAL CLADDING
BV	BLACK VINYL SKIRTING	MR-01	METAL ROOF
CON	CONCRETE FLOOR	MR-02	METAL ROOF
CFC	COMPRESSED FIBRE CEMENT	PB	PLASTERBOARD
CT-01	CEILING TYPE	PC	PRECAST CONCRETE
CT-02	CEILING TYPE	PY	POLYCARBONATE
CT-03	CEILING TYPE	SCN-01	SCREEN
CV	COVED SKIRTING	SCN-02	SCREEN
EP	EPOXY	SH	SHADE COVER
EX	EXISTING	SF	SOFFIT
FC-01	FIBRE CEMENT	TFG	TIMBER FIXED GLASS
FC-02	FIBRE CEMENT	TIM-01	TIMBER
FC-03	FIBRE CEMENT	VIN-01	VINYL FLOOR
FC-04	FIBRE CEMENT	VIN-02	VINYL WALL
LIN-01	LINOLEUM FLOOR	WB-01	WEATHERBOARDS
LV	LOUVRES		

REV	DESCRIPTION	DATE	AMENDMENTS IN CURRENT REVISION (SHOWN CLOUDED ON DRAWINGS)	TITLE
01	ISSUE FOR INFORMATION	23/5/2025	No. AMENDMENT DESCRIPTION	
02	DRAFT ISSUE	20/6/2025		
03	03 BRIEFING PACK	28/6/2025		
04	DRAFT 20% CONCEPT DESIGN ISSUE	6/8/2025		

TITLE	TITLE	TITLE	LEGEND

TITLE	TITLE	TITLE

LEGEND

CLIENT Department of Climate Change, Energy, the Environment and Water (DCCEEW), NSW National Parks and Wildlife (NPWS) Service with Lord Howe Island Board (LHIB)

PROJECT TITLE CRITICAL INFRASTRUCTURE PROGRAM LORD HOWE ISLAND

lahznimmo architects Suite 404, Flourmill Studios 3 Gladstone St Newtown NSW 2042 Australia T 02 9550 5200 F 02 9550 5233 www.lahznimmo.com

LOCATION	TITLE
NORTH ZONE	PLAN - OLD CARGO SHED

REVIEW	DIRECTOR SIGNATURE	DATE	DRAWN	PLOT DATE	SCALE @A1	1:100	CHECKED	PROJECT NO.	DRAWING NO.	REV. NO.
TENDER			BG	6/8/2025			BC	24-05	A - D A - 14 . 0 2	04



1 PROPOSED SITE PLAN - SOUTH ZONE
1:500

										LOCATION		SOUTH ZONE						
REV	DESCRIPTION	DATE	AMENDMENTS IN CURRENT REVISION (SHOWN CLOUDED ON DRAWINGS)		TITLE	TITLE	TITLE	LEGEND	NORTH  DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE. REFER ANY DISCREPANCIES TO THE ARCHITECT. THIS DRAWING, THE INFORMATION ON IT AND THE DESIGN ARE COPYRIGHT OF LAHZNIMMO ARCHITECTS PTY LTD	CLIENT		Department of Climate Change, Energy, the Environment and Water (DCCEEW), NSW National Parks and Wildlife (NPWS) Service with Lord Howe Island Board (LHIB) 	PROJECT TITLE		lahznimmo architects		TITLE	
01	ISSUE FOR INFORMATION	23/5/2025	No.	AMENDMENT DESCRIPTION							Suite 404, Flourmill Studios T 02 9550 5200 F 02 9550 5233 www.lahznimmo.com		PROPOSED SITE PLAN - WMF					
02	DRAFT ISSUE	20/6/2025																
03	QS BRIEFING PACK	26/6/2025																
04	DRAFT 20% CONCEPT DESIGN ISSUE	6/8/2025																
							</											

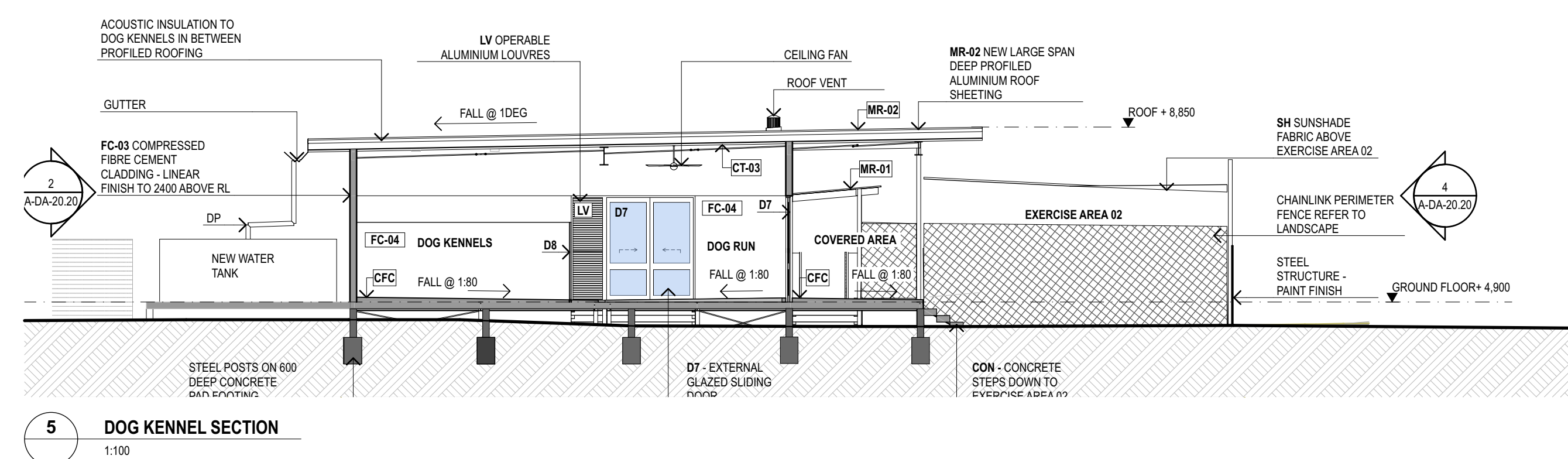
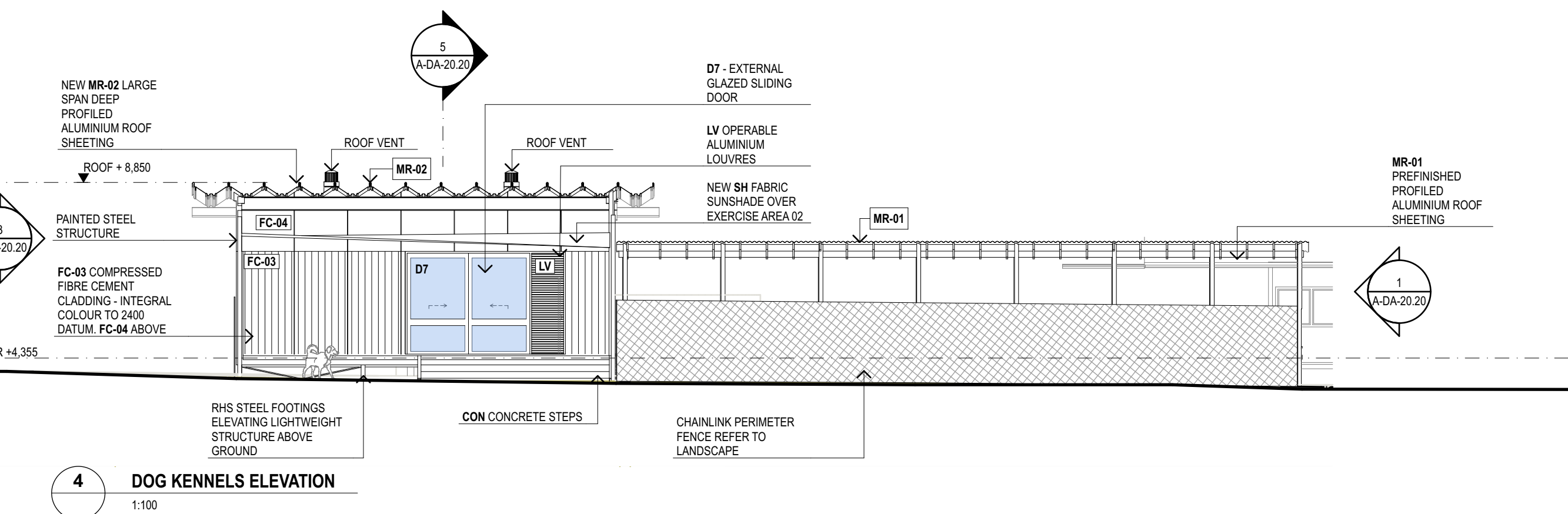


1

PROPOSED SITE PLAN - DOG KENNELS + FUEL BOWSER

1:500

REV	DESCRIPTION	DATE	AMENDMENTS IN CURRENT REVISION (SHOWN CLOUDED ON DRAWINGS)	TITLE	TITLE	TITLE	LEGEND	NORTH	CLIENT	PROJECT TITLE	lahznimmo architects	LOCATION	SOUTH ZONE					
01	ISSUE FOR INFORMATION	23/5/2025	No. AMENDMENT DESCRIPTION					DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE. REFER ANY DISCREPANCIES TO THE ARCHITECT. THIS DRAWING, THE INFORMATION ON IT AND THE DESIGN ARE COPYRIGHT OF LAHZ MNMO ARCHITECTS PTY LTD	Department of Climate Change, Energy, the Environment and Water (DCCEEW), NSW National Parks and Wildlife (NPWS) Service with Lord Howe Island Board (LHIB) NSW GOVERNMENT	CRITICAL INFRASTRUCTURE PROGRAM LORD HOWE ISLAND	lahznimmo architects Suite 404, Flourmill Studios 3 Gladstone St Newtown NSW 2042 Australia T 02 9550 5200 F 02 9550 5233 www.lahznimmo.com	PROPOSED SITE PLAN - DOG KENNELS + FUEL BOWSER						
02	DRAFT ISSUE	20/6/2025																
03	QS BRIEFING PACK	28/6/2025																
04	DRAFT 20% CONCEPT DESIGN ISSUE	6/8/2025																

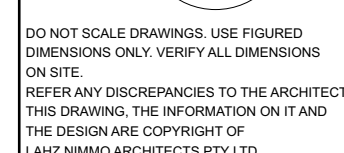
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REV	DESCRIPTION	DATE	AMENDMENTS IN CURRENT REVISION (SHOWN CLOUDED ON DRAWINGS)
01	DRAFT ISSUE	2/6/2025	No. AMENDMENT DESCRIPTION
02	QS BRIEFING PACK	28/6/2025	
03	DRAFT 20% CONCEPT DESIGN ISSUE	6/8/2025	

TITLE	TITLE	TITLE
TITLE	TITLE	TITLE

	NORTH
--	-------



SCALE CHECK

5

10

REVIEW	DIRECTOR SIGNATURE	DATE
TENDER		
CONST		

DRAWN BG	PLOT DATE 6/8/2025	SCALE @A1 1:100	
CHECKED BC	PROJECT NO. 24-05	DRAWING NO. A - P A - 2 0 . 3 0	REV. NO. 03

Appendix H

Lord Howe Island Local Tsunami Plan

SECTOR B- HALL TO OLD SETTLEMENT

Community: Lord Howe Island North
 Management Sector: Sector B
 At Risk Population: 15 properties
 Tsunami Affect Classification: Low Flood Island - **High Risk Sector**

Sector Description:

This sector starts below the 10 m contour and is a raising road to above the 20 m contour line. The lower part of this sector contains many small business and shops for the Island.

Key Risks / Consequences

Most Commercial business are in this sector

Evacuation/ Assembly Point

Ocean View
 Lodge
 Old met Site -

Evacuation Routes

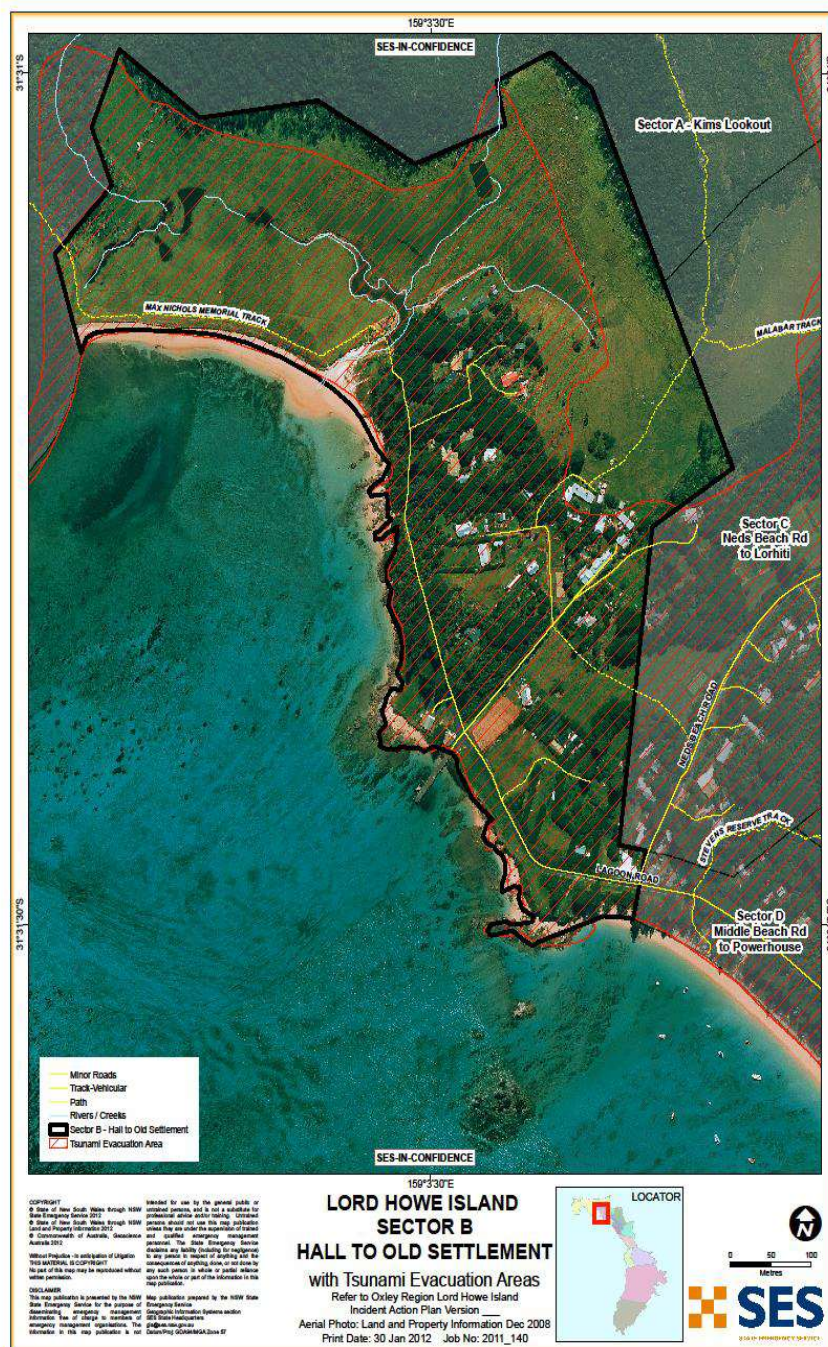
Ocean View Rd
 Skyline Drive

Accommodation within Sector - Isolated/Inundated

Blue lagoon - At Risk of Inundation

At Risk Properties - Critical Infrastructure

Commercial businesses



SECTOR I – AIRPORT STRIP

Community: Lord Howe Island South
 Management Sector: Sector I
 At Risk Population: 11 Properties
 Tsunami Affect Classification: Low Flood Island – **High Risk Sector**



Sector Description:

This sector sits below the 10m contour line and is at high risk. This sector is the main transport into and off the Island. The airport is located here and access would be lost for any incoming support.

Key Risks / Consequences

Loss of airport and access to Island if runway compromised.

6 x Residential Properties
 5 x Commercial properties

Evacuation / Assembly Point

Golf Club

Evacuation / Assembly Point

Head South along lagoon road to Golf Club

Accommodation within Sector – Isolated/Inundated

N/A

At Risk Properties – Critical Infrastructure

Airport
 BOM Site
 Waste Management Facility



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