CITY OF MORETON BAY

Enquiries: Ally Maric
Direct Phone: 07 5433 2248
Our Ref: DA/2024/5622
Your Ref: 22-0320
Date: 27 February 2025

Orchard (Gibbings) Developments Pty Ltd
C/- Colliers International Engineering And Design Pty Ltd
Level 4 / 196 Wharf Street
SPRING HILL QLD 4000

Dear Applicant,

Re: CHANGE APPLICATION FOR A MINOR CHANGE TO A DEVELOPMENT APPROVAL
Under section 79 of the Planning Act 2016

Development Application No.:	**DA/2024/5622**
Property Location:	**26 Gibbings Court, Lilywood**
Property Description:	**Lot 4 SP 191667**
Development Type:	**Request to Change (Minor) - Reconfiguring a Lot - Development Permit for Subdivision (1 into 133 Lots, Park and Open Space over 3 Stages)**

I refer to the Change Application in respect to the abovementioned development approval and advise that on 26 February 2025 Council's Delegate as the Assessment Manager decided to approve these changes in accordance with the *Planning Act 2016*.

A Changed Development Approval for the following has now been issued;

- Development Permit for Reconfiguration of a Lot (1 into 133 Lots, Park and Open Space over 3 Stages)

This Changed Decision Notice replaces the Notice previously issued and dated 22 December 2023.

The development allowed by this approval must be carried out in accordance with the attached decision package.

Attached is an extract from the *Planning Act 2016* which details your appeal rights and the appeal rights of any submitters, if applicable, regarding this decision.

Should you have any further queries in relation to this decision, please contact me as referenced above.

Yours faithfully

Ally Maric
Senior Planner
Development Services

Enclosures: Attachment 1 - Decision Notice
Attachment 2 - Assessment Manager Conditions
Attachment 3 - Approved Plans/ Documents
Attachment 4 - Appeal Rights
Attachment 5 - Amended Infrastructure Charges Notice

ATTACHMENT 1

Decision Notice

Decision Notice

Planning Act 2016, section 83

NATURE OF CHANGES

The nature of the agreed changes include;

- Table "Approved Plans and Documents" – Table Amended

All other aspects of the previous Notice remain unchanged.

APPLICATION DETAILS

Date of Change Application:	**5 December 2024**
Application No:	**DA/2024/5622**
Applicant:	**Orchard (Gibbings) Developments Pty Ltd**
Street Address:	**26 Gibbings Court, Lilywood**
Real Property Description:	**Lot 4 SP 191667**
Planning Scheme:	**Moreton Bay Regional Council Planning Scheme**

APPROVAL DETAILS

Date of previous Notice: 22 December 2023

Date of Decision of Changed Development Approval: 26 February 2025

This change application was approved by Council's Delegate as the Assessment Manager subject to conditions (refer Attachment 2).

APPLICATION TYPE	Development Permit	Preliminary Approval
Reconfiguring a Lot for **1 into 133 Lots, Park and Open Space over 3 Stages**	☑	☐

OTHER NECESSARY PERMITS

Listed below are other permit/s that are necessary to allow the development to be carried out:

- Operational Work - Road works;
- Operational Work - Stormwater;
- Operational Work - Earthworks;
- Operational Work - Landscaping; and,
- Operational Work - Electrical and Street Lighting

CURRENCY PERIOD OF APPROVAL

The currency period stated in section 85 of the *Planning Act 2016* applies to each aspect of development in this approval, as outlined below:

- Reconfiguring a Lot – 4 years from the date this approval starts to have effect.

INFRASTRUCTURE

Unless otherwise specified, all assessment manager conditions of this development approval relating to the provision of infrastructure are non-trunk infrastructure conditions under Chapter 4, section 145 of the *Planning Act 2016*.

ASSESSMENT MANAGER CONDITIONS

The conditions relevant to this development approval are listed in Attachment 2 of the Decision package.

APPROVED PLANS / DOCUMENTS

The approved plans and/or documents as listed below for this development approval are included in Attachment 3 of the Decision package.

Approved Plans and Documents			
Plan / Document Name	**Reference Number**	**Prepared By**	**Dated**
Plan of Subdivision	22-0320-PS1 Issue C	Colliers	03/12/2024
Plan of Development	22-0320-PD1 Issue C	Colliers	03/12/2024
Road Hierarchy Plan	22-0320-PG2 Issue C	Colliers	03/12/2024
Pathway Hierarchy Plan	22-0320-PG3 Issue C	Colliers	03/12/2024
Coversheet and Locality Plan	620.31050-001 Issue C	SLR	18/10/2021
Landscape Concept Plan	620.31050-002 Issue C	SLR	18/10/2021
Streetscape intent and Plant Schedules	620.31050-003 Issue C	SLR	18/10/2021
Local Recreation Park	620.31050-004 Issue C	SLR	18/10/2021
Flood and Stormwater Management Plan	22-0039SMP01-V1	Colliers	14/10/2022
Bushfire Management Plan	005.10.22 Rev 1	Bushfire Risk Reducers	17/10/2022

Table Amended - Request to Change Development Approval - Delegated Authority 26 February 2024

ASSESSMENT BENCHMARKS

The Assessment Benchmarks that applied to the development from the following Categorising Instruments include;

Categorising Instrument (*Planning Regulation 2017*)

State Planning Policy
- *State Planning Policy 2017*, Part E

Regional Plan
- *South East Queensland Regional Plan 2017 (ShapingSEQ)*

Local Categorising Instrument (*Moreton Bay Regional Council Planning Scheme*)

- Caboolture West Local Plan Code - Urban Living Precinct (Overall Outcomes only);
- Reconfiguring a Lot Code (Urban Living Precinct and Green Network Precinct); and,
- Flood Hazard Overlay Code.

Local Categorising Instrument (Variation Approval)

Not applicable.

Local Categorising Instrument (Temporary Local Planning Instrument)

Not applicable.

REASONS FOR THE DECISION

Subject to development conditions being imposed (refer Attachment 2), the development can comply with the applicable Assessment Benchmarks against which the application was required to be assessed. For further details, refer to the Reasons for the Decision section of the Assessment Report which is available on Council's website (via DA Tracker) *https://www.moretonbay.qld.gov.au/Services/Building-Development/DA-Tracker* using the application number referenced in this Notice.

REASONS FOR APPROVAL DESPITE NON-COMPLIANCE WITH ASSESSMENT BENCHMARKS

The application was approved despite non-compliance with particular Assessment Benchmarks. For details regarding the grounds that were considered sufficient to justify the decision despite the non-compliance, refer to the Reasons for Approval Despite Non-Compliance with Assessment Benchmarks section of the Assessment Report which is available on Council's website (via DA Tracker) *https://www.moretonbay.qld.gov.au/Services/Building-Development/DA-Tracker* using the application number referenced in this Notice.

REFERRAL AGENCY CONDITIONS

There were no Referral Agencies applicable to this development application.

APPEAL RIGHTS

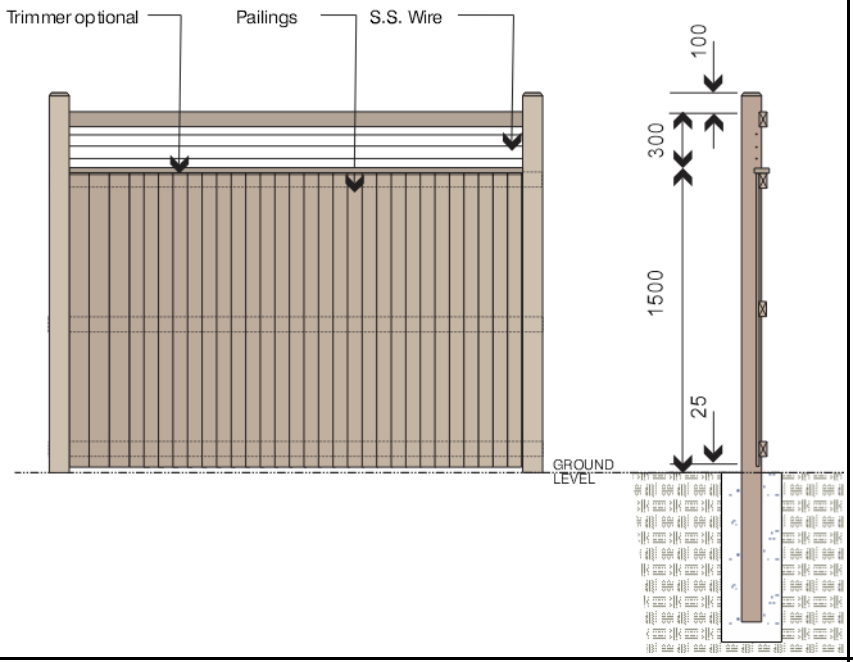
Attachment 4 of the Decision package is an extract from the *Planning Act 2016* which details your appeal rights and the appeal rights of any submitters, if applicable, regarding this decision.

OTHER DETAILS

If you wish to obtain more information about Council's decision, please refer to the Assessment Report for the application on Council's *(DA Tracker) https://www.moretonbay.qld.gov.au/Services/Building-Development/DA-Tracker using the application number referenced in this Notice.*

ATTACHMENT 2

Assessment Manager Conditions of Approval

CONDITION		TIMING
RECONFIGURING A LOT - ALL STAGES		
DEVELOPMENT PLANNING		
1.	**Approved Plans and/or Documents**	
	Undertake development in accordance with the approved plans and/or documents. These plans and/or documents will form part of the approval, unless otherwise amended by conditions of this approval.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan) and to be maintained at all times.
2.	**Fencing of Public Areas**	
	Provide semi-transparent fencing in the following locations: 1. along the south-western boundary of Lots 223 & 326; 2. along the south-eastern boundary of Lots 145, 307 & 337; 3. along the north-western boundary of Lots 222 & 327; and 4. along the north-eastern boundary of Lots 144, 306, 317 & 338 Fencing is to have a maximum height of 1.8 meters and a minimum 85% transparency for any part of the fence above 1.5m in height, unless otherwise approved in writing by Council. An example is shown in the image below.  	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development and to be maintained at all times.
3.	**Entry Statement**	
	Establishment of any “Entry Statement” as a marketing strategy for the development must accord with the following, unless otherwise approved by Council:	Prior to submitting to the Council any request for approval of a plan of

CONDITION		TIMING
	1. Located within a privately owned allotment or on the boundary of a privately owned allotment; 2. Limited to one (1) entry statement per development; 3. Constructed of durable, weather resistant materials; 4. Positively contributes to the character of the surrounding area; and 5. Does not contain the logo of any developer or other entity.	subdivision (i.e. survey plan).
4.	**Landscaping for Reconfiguring a Lot**	
A	Carry out landscaping and associated earthworks, site preparation and other necessary works in accordance with approved Landscape Architecture Concept plans, details and technical specifications of any proposed planting or landscape work (both soft and hard works) where such works will be on land under the control of Council, whether as a park, reserve or road reserve. Landscaping is to accord with Planning scheme policy - Integrated design Appendix D - Landscaping.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
B	Before commencing the works obtain Operational Works approval for the plans, details and technical specifications of any planting or landscape work from Council.	Prior to work commencing on site.
5.	**Street Trees**	
	Provide street trees within the development in accordance with Planning scheme policy - Integrated design Appendix D - Landscaping and the approved Landscape Architecture Concept plans.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
6.	**Water and/or Sewerage**	
	Submit to Council a Certificate of Completion or Provisional Certificate of Completion (for each stage where there are stages) for the development from the Northern SEQ Distributor–Retailer Authority (Unitywater) confirming: 1. a reticulated water supply network connection is available to the land; and 2. a sewerage network connection is available to the land; and 3. all the requirements of Unitywater have been satisfied.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
7.	**New Telecommunications Infrastructure**	
A	Provide Fibre-Ready telecommunications infrastructure (pit and pipe) throughout the development in accordance with the Communication Alliance specifications contained within Industry Guideline G645:2011 Fibre Ready Pit and Pipe Specifications for Real Estate Development Projects or in accordance with the NBN Co. specifications contained within New Developments: Deployment of the NBN Co Conduit and Pit Network – Guidelines for Developers NBN-TE-CTO-194 and Creating Pit and Pipe Designs for New Developments (Job Aid for	Prior to the development being accepted off maintenance.

CONDITION		TIMING
	Developers) NBN-TE-CTO-586, as amended and current at the date of installation.	
B	Provide certification from a RPEQ electrical engineer that the works specified in (a) above have been installed and evidence that a telecommunications carrier licensed under the Telecommunications Act 1997 has agreed to take ownership of the infrastructure.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
8.	**Existing Service Connections**	
	Submit certification from a suitably qualified person that: 1. All of the existing service connections (electricity, telecommunications, water) to an existing building or a private property pole is wholly contained in the lot it serves; and 2. Any electricity connections and infrastructure made redundant by the development is removed with the land reinstated.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
9.	**Electricity**	
A	Provide evidence (e.g. Certificate for Electricity Supply to Subdividers with Agreement Number or Certificate of Supply) demonstrating that an electricity supply network has or will be constructed within all new roads and along the frontage of each proposed lot.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
B	Provide an underground electricity supply connection to each proposed lot.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
C	Submit certification from a licensed surveyor, Registered Professional Engineer of Queensland (RPEQ) or registered building surveyor that any electricity connections and infrastructure made redundant by the development is removed with the land reinstated.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
D	Ensure any padmount transformer located immediately adjacent to proposed public use land / open space is painted with a mural or has a film applied on all sides that integrates the infrastructure into the location of being adjacent to the open space. Concepts for the mural are to be approved by Council and align with the	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e.

CONDITION		TIMING
	use of the adjoining land as open space or alternatively the environmental values of the area e.g. koalas or a previous use of the land. An example is shown in the image below; 	survey plan) for each respective stage of the development.
10.	**Certify Lots are in Accordance with Approved Plan**	
	Provide certification from a Licensed Surveyor that the lots created accord with the approved plan.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
11.	**Street Names**	
A	Submit requests for the names of new street/s in accordance with Council's Policy 11-2150-038 Allocation of Road Names and Street Address Numbers or as amended;	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
B	Obtain approval from Council for the names of new streets in accordance with (A) above;	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
C	Erect approved street name boards on all new roads in accordance (A) and (B); and	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
D	Mark all street names on the survey plans.	Prior to submitting to the Council any request for approval

CONDITION		TIMING
		of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
12.	**Payment of Rates**	
	Pay all outstanding rates and charges applicable to the subject land.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
13.	**Dedicated Road Access**	
	Provide dedicated constructed road access to the development.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
14.	**Develop in Stages**	
	Develop the site generally in accordance with the stages identified on the approved plans in consecutive order. Development must comply with each condition of the development approval as it relates to each stage, unless otherwise stated in the condition.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
15.	**Remove /Demolition of Existing Buildings**	
	Remove / demolish all existing buildings located on the site.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan).
16.	**Plan of Development**	
	Development must comply with the approved Plan of Development unless otherwise approved in writing by Council.	To be maintained at all times.
17.	**Advice to Purchasers Regarding Plan of Development**	
A	Acknowledge in writing that potential purchasers will be advised of the approved Plan of Development and the requirement to comply with the approved Plan of Development.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e.

CONDITION		TIMING
		survey plan) for each respective stage of the development.
B	Provide potential purchasers with written notice of the approved Plan of Development and the requirement to comply with the approved Plan of Development.	Prior to entering into a contract of sale for the relevant lot.
18.	**Fauna Management Plan**	
A	Submit a Fauna Management Plan to reduce potential impacts on native fauna. The plan must be prepared by a suitably qualified person and contain at least the following information: 1. Procedures for dealing with fauna observed immediately prior to vegetation clearing; 2. Procedures for dealing with fauna during vegetation clearing; 3. Procedures for the treatment / removal of injured fauna from the site.	Prior to works commencing on site.
B	Obtain approval from Council for the Fauna Management Plan in accordance with (A) above.	Prior to works commencing on site.
C	Carry out works in accordance with the approved Fauna Management Plan.	During site works and to be maintained.
19.	**No Net Loss of Fauna Habitat**	
	Development does not result in the net loss of fauna habitat. Where development does result in the loss of a Habitat Tree, development will provide replacement fauna nesting boxes at the following rate: 1. One (1) nest box for every hollow removed; or 2. Where hollows have not yet formed in trees greater than 80cm in diameter at 1.3m height, three (3) nest boxes are required for every habitat tree removed.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan).
B	Where development does result in the loss of a Habitat Tree, submit and obtain approval from Council for a nest box management plan with details of the proposed construction, installation methods and GPS location for each nest box for Council's records. The plan must be prepared in accordance with Council's Planning scheme policy - Environmental areas and corridors and by a suitably qualified person and include details of proposed maintenance and protocols for replacing fallen or broken nest boxes. Include any additional information that may be relevant such as: 1. Exact number of habitat trees and number of hollows to be impacted, 2. Assessment of replacement hollows required as per 'No Net Loss of Fauna Habitat' condition requirements, 3. Assessment of target species, 4. Requirements for the target species, 5. Nest box types - design and sizes, 6. Installation technique, 7. Proposed location of installed nest box including GPS location and owner's consent,	Prior to any vegetation clearing.

CONDITION		TIMING
	8. Installation timeframes which provide for installation prior to the commencement of clearing wherever possible, otherwise within seven (7) days of clearing; and 9. Monitoring and maintenance regime details, including protocols for replacing fallen or broken nest boxes. *Note: Nest boxes must be maintained for a minimum of 12 months post installation.*	
C	If nest box installation is proposed within a Council park, provide written confirmation from Council's Coordinator Parks and Recreation Planning that Council agrees to the installation of the nest boxes within Council park. *Note: The agreement may require the payment of a maintenance bond refundable after the satisfactory completion of the 12 months* maintenance *period.*	Prior to any vegetation clearing.
D	Provide a copy of written permission to enter Council Land from Council's Operations Technical Services team.	Prior to any vegetation clearing.
20.	**Vegetation Management Plan**	
A	Submit to and obtain approval from Council for a Vegetation Management Plan prepared in accordance with Council's *Planning Scheme Policy - Environmental Areas and Corridors,* and by a suitably qualified person. The plan must be prepared in accordance with AS4970-2009 - Protection of Trees on Development Sites and include scaled plans and supporting documentation that provides for, but is not limited to, the following: 1. Identification of all vegetation and tree protection zones within and adjacent to the development site that may be impacted by the development and justification for treatment intent (remove-✗ retain -✓ prune -p); 2. Control measures, maintenance procedures and monitoring programs; 3. Procedures for dealing with fauna observed immediately prior to vegetation clearing; 4. Procedures for dealing with fauna during vegetation clearing; 5. Procedures for the treatment / removal of injured fauna from the site; 6. "no parking of vehicles in these areas".	Prior to any site works occurring
B	Carry out works in accordance with the approved Vegetation Management Plan.	At all times
21.	**Extent of Vegetation Clearing**	
A	Undertake vegetation clearing in accordance with the approved Ecological Assessment Report. No additional clearing is permitted beyond the development footprint.	At all times.

CONDITION		TIMING
B	Clearing of native vegetation must not occur within or impact on the tree protection zone of vegetation within adjoining premises.	At all times.
22.	**Disposal of Cleared Vegetation**	
	Chip, shred or tub grind cleared native vegetation and spread as mulch or dispose of at an authorised waste facility. Any hollows observed in cleared vegetation must be salvaged and installed as nest boxes in trees within the property.	At all times.
23.	**Stockpiles of Construction and Landscaping Materials**	
	Locate any stockpiles of construction and landscaping materials and other site debris clear of drainage lines and clear of any position from which it could be washed onto any footpath, nature strip, roadway or into any drain, wetland or watercourse.	During site works.
24.	**Temporary Exclusion Fencing**	
	Delineate areas where vegetation is proposed to be retained with exclusion fencing to prevent accidental felling. Clearing is to be undertaken in accordance with AS 4970-2009 Protection of Trees on Development Sites.	During site works.
25.	**Bushfire Management Plan**	
	Implement the requirements and recommendations of the approved Bushfire Management Plan (*Attachment 3 - Bushfire Management Plan, ref.005.10.22, October 2022*) by Bushfire Risk Reducers.	At all times
26.	**Infrastructure Agreement**	
	In accordance with Section 65(2)(c) of the *Planning Act 2016*, carry out development in accordance with, and comply with the obligations in, the executed *Gibbings Court Infrastructure Agreement 2023* between Moreton Bay Regional Council and Orchard (Gibbings) Developments Pty Ltd.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. survey plan) for each respective stage of the development.
DEVELOPMENT ENGINEERING		
27.	**Replace Existing Council Infrastructure**	
	Replace existing Council infrastructure (including but not limited to street trees and footpaths) that is damaged as part of works carried out in association with the development to Council's standards.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan) for each respective stage of the development.
28.	**Alterations and Relocation of Existing Services**	
	Ensure any alteration or relocation in connection with or arising from the development to any service, installation, plant, equipment or other item belonging to or under the control of an	Prior to submitting to the Council any request for approval

CONDITION		TIMING
	entity engaged in the provision of public utility services is to be carried out with the development and at no cost to Council unless agreed to in writing by the Council.	of a plan of subdivision (i.e. a survey plan) for each respective stage of the development.
29.	**Stormwater**	
	Carry out the development to ensure that adjoining properties, reserves and roads are protected from ponding or nuisance from stormwater as a result of any works undertaken.	To be maintained at all times.
30.	**Stormwater Management**	
A	Submit and have approved by Council, a development application for operational works for stormwater infrastructure to service the development. Design drawings are to be prepared and certified by a suitably qualified Registered Professional Engineer Queensland (RPEQ) and in accordance with the approved plans and documents of development and the MBRC Planning Scheme current at the time of the operational works application.	Prior to commencement of works associated with this condition.
B	Construct stormwater infrastructure to service the development at no cost to Council and in accordance with the approved plans and documents of development. This condition has been imposed under section 145 of the *Planning Act 2016*.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan) for each respective stage of the development.
C	Provide registered easements in favour of Council over any drainage paths and drainage infrastructure within all new lot/s in accordance with the approved plans and documents of development. The easement documents must acknowledge the maintenance, repair and replacement responsibilities of the owner of this development site. Note: All easements are to be shown on plans submitted as part of operational works applications.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan) for each respective stage of the development.
31.	**Construction Management Plan**	
A	Submit and have approved by Council, a Construction Management Plan (CMP) prepared by the Principal Contractor. The CMP is to outline, in sufficient detail, the processes that will be employed to minimise impacts on the surrounding community during construction. These processes are to cover the following: 1. Material delivery and storage locations 2. Waste locations and collection details 3. Construction office accommodation 4. Contractor / tradesman vehicle parking arrangements	Not less than two (2) weeks prior to commencement of works. To be maintained current at all times.

CONDITION		TIMING
	5. Works that may make audible noise outside of 6:30am to 6:30pm any business day or Saturday. The CMP may include a site layout drawing identifying these areas. The CMP needs to reflect any staging requirements. Notes: a. Council will generally only approve early starts for large concrete pours during summer (e.g. monolithic concrete pours for basements and suspended floor slabs) b. Dewatering directly into Council's stormwater system (pipes or overland flow) without appropriate water quality treatment/improvement is not acceptable c. Traffic control measures may need to be put in place for the duration of the construction works to control contractor / tradesman vehicle parking arrangements, this should be documented within the CMP d. Materials unloading and loading must occur on-site unless prior written approval is given by Council. e. All construction office accommodation and associated temporary buildings is to be contained within the site or on a nearby site.	
B	Implement the approved Construction Management Plan (CMP) and keep a copy of the approved CMP on site at all times during construction.	At all times during construction of the development.
32.	**Erosion and Sediment Control**	
	Implement an Erosion and Sediment Control Plan prepared by an experienced Certified Professional in Erosion and Sediment Control (CPESC) in accordance with the International Erosion Control Association Australasia (IECA) Best Practice and Sediment Control document.	Prior to commencement of works and to be maintained current at all times during construction.
33.	**Acid Sulfate Soils**	
A	Prepare an Acid Sulfate Soil Investigation Report and if required an Acid Sulfate Soils Management Plan. The reports and analysis are to be undertaken in accordance with the MBRC Planning Scheme and prepared by a suitably qualified person.	Prior to the commencement of works.
B	Implement the requirements and recommendations of the Acid Sulfate Soil Management Plan. All testing and monitoring is to be undertaken in accordance with the MBRC Planning Scheme.	While site works are occurring
C	Provide certification from a suitably qualified person that all works have been undertaken in accordance with the Acid Sulfate Soil Management Plan.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan) for each

CONDITION		TIMING
		respective stage of the development.
	Note: Council will only accept a 'suitably qualified person' as being either a Registered Professional Engineer of Queensland (RPEQ) or Environmental/Soil Scientist with current professional membership status at a relevant organisation (e.g. ASSSI, AIG; EIANZ; GSA) and has obtained a minimum of five (5) years professional experience in the field of acid sulfate soils.	
34.	**Earth Retaining Structures**	
A	Design all earth retaining structures within private land in accordance with Australian Standards, Building Code requirements and MBRC Planning scheme current the time of the operational works application and the following: 1. The minimum design life (the period assumed in design for which a structure or structural element is required to perform its intended purpose without replacement or major structural repairs) for the earth retaining structure that is specified in Table 3.1 of Australian Standard AS4678; 2. Earth retaining structures within the land and around areas of cut on or near the boundaries of the site must be designed to allow for live and dead loads associated with the land/premise's current occupancy use; 3. Provide temporary safety fencing to all earth retaining structures over 1.0m in height.	Prior to commencement of works associated with this condition.
B	Submit and have approved by Council, a development application for operational works for all earth retaining structures. Design drawing are to be prepared and certified by a suitably qualified Registered Professional Engineer Queensland (RPEQ) and in accordance with the approved plans and documents of development and the MBRC Planning Scheme current at the time of the operational works application and they are to clearly show the location and overall configuration (fully dimensioned), design parameters and loads, materials and finishes of all earth retaining structures for the development.	Prior to commencement of works associated with this condition.
C	Construct all earth retaining structures within private land in accordance with Australian Standards, Building Code requirements and approved plans and documents of development.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan) for each respective stage of the development.
E	Provide written certification from a suitably qualified and experienced RPEQ that the works comply with the permit condition.	Prior to lodging a request for compliance assessment of

CONDITION		TIMING
		subdivision plans for each stage.
35.	**Existing Dams**	
A	Drain, desilt, remove embankments of existing dams and fill the dam to reinstate the ground levels generally as they existed prior to the dam being constructed and in accordance with the plans and documents of development. The dam area is to be made free draining and stabilized to prevent erosion. Any filling required to ensure the area is free draining is to be carried out in accordance with Level 1 supervision as detailed in AS3798. This condition has been imposed under section 145 of the *Planning Act 2016*.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan).
B	Provide certification from a suitable geotechnical testing authority that filling has been conducted in accordance with AS3798.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan).
36.	**Minimum Flood Planning Level**	
A	Submit and have approved by Council, a development application for operational works for earthworks associated with pad / allotment fill to the Council adopted Flood Planning Level (FPL). Design drawing are to be prepared and certified by a suitably qualified Registered Professional Engineer Queensland (RPEQ) and in accordance with the approved plans and documents of development and the MBRC Planning Scheme current at the time of the operational works application. The FPL used for development can be obtained from the relevant section of the Flood Check Development Report available via Council's website: www.moretonbay.qld.gov.au.	Prior to commencement of works associated with this condition.
B	Construct the pad / allotment levels, at no cost to Council and in accordance with the approved plans and documents of development.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan) for each respective stage of the development.
C	Submit to Council As-Constructed drawings prepared by a Registered Surveyor, certifying that the development has been constructed in accordance this condition.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan) for each

CONDITION		TIMING
		respective stage of the development.

CONDITION		TIMING
RECONFIGURING A LOT - STAGE 1		
DEVELOPMENT ENGINEERING		
37.	**Minimum Flood Planning Level**	
A	Submit and have approved by Council, a development application for operational works for the following: All new roads and associated works. The following classifications are to be applied: 1. Modified Contemporary Residential Road (17.5m) - from Lot 101 to 125 2. Modified Living Residential Road (16.5m) - From Lot 108 to 147 & Lot 126 to 140 3. Modified Contemporary Residential Road (16.0m) - Lot 125 to 159. Design drawings are to be prepared and certified by a suitably qualified Registered Professional Engineer Queensland (RPEQ) and in accordance with the approved plans and documents of development and the MBRC Planning Scheme current at the time of the operational works application. Notes: Modified Living Residential Road - 16.5m wide. a. Two 4.0m wide travel lanes b. Kerb and Channel both sides c. One 4.5m wide verge made up of a 1.5m wide front verge, 2.0m wide pedestrian path and 1.0m wide verge. d. One 4.0m wide verge. Modified Contemporary Residential Road - 17.5m wide. a. Two 3.3m wide travel lanes b. One 2.4m wide parallel parking bays on the southern edge of the road c. One 5.0m wide verge on the north made up of a 1.5m wide front verge, 2.0m wide pedestrian path and 1.5m wide rear verge. d. One 3.5m wide verge on the southern verge of the road. Modified contemporary Residential Road - 16.0m wide. a. Two 3.3m wide travel lanes b. One 2.4m wide parallel parking bays on the western edge of the road c. One 4.0m wide verge on the eastern side of the road. d. One 3.0m wide verge on the western verge side of the road.	Prior to commencement of works associated with this condition.

CONDITION		TIMING
38.	**Temporary Turnarounds**	
A	Submit and have approved by Council a development application for operational works for a sealed turnaround at the end of all new roads. Design drawings are to be prepared and certified by a suitably qualified Registered Professional Engineer Queensland (RPEQ) and in accordance with approved plans and documents of development and the MBRC Planning Scheme current at the time of the operational works application and the following: 1. The turnaround is to be of a configuration that enables Council's standard waste collection vehicle to undertake a three point turn or better.	Prior to commencement of works associated with this condition.
B	Construct a sealed turnaround at the end of all new roads, at no cost to Council and in accordance with approved plans and documents of development. This condition has been imposed under section 145 of the *Planning Act 2016*.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan).
39.	**Pathways**	
	Construct, at no cost to Council, a 2.0 metre wide reinforced concrete pathway in accordance with the approved pathway plan. This condition has been imposed under section 145 of the *Planning Act 2016.*	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan).

CONDITION		TIMING
RECONFIGURING A LOT - STAGE 2		
DEVELOPMENT ENGINEERING		
40.	**New Council Roads**	
A	Submit and have approved by Council, a development application for operational works for the following: All new roads and associated works. The following classifications are to be applied: 1. Modified Contemporary Residential Road (16.0m) - from Lot 201 to 232 2. Modified Living Residential Road (16.5m) - 201 to 208 & 209 to 213. Design drawings are to be prepared and certified by a suitably qualified Registered Professional Engineer Queensland (RPEQ) and in accordance with the approved plans and documents of development and the MBRC Planning Scheme current at the time of the operational works application. Modified Living Residential Road - 16.5m wide.	Prior to commencement of works associated with this condition.

CONDITION		TIMING
	a. Two 4.0m wide travel lanes b. Kerb and Channel both sides c. One 4.5m wide verge made up of a 1.5m wide front verge, 2.0m wide pedestrian path and 1.0m wide verge. d. One 4.0m wide verge. Modified contemporary Residential Road - 16.0m wide. a. Two 3.3 meter wide travel lanes b. One 2.4m wide parallel parking bays on the western edge of the road c. One 4.0m wide verge on the eastern side of the road. d. One 3.0m wide verge on the western verge side of the road.	
B	Construct, at no cost to Council and in accordance with the approved plans and documents of development the following: 1. All new roads and associated works This condition has been imposed under section 145 of the *Planning Act 2016*.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan).
41.	**Temporary Turnarounds**	
A	Submit and have approved by Council a development application for operational works for a sealed turnaround at the end of all new roads. Design drawings are to be prepared and certified by a suitably qualified Registered Professional Engineer Queensland (RPEQ) and in accordance with approved plans and documents of development and the MBRC Planning Scheme current at the time of the operational works application and the following: 1. The turnaround is to be of a configuration that enables Council's standard waste collection vehicle to undertake a three point turn or better.	Prior to commencement of works associated with this condition.
B	Construct a sealed turnaround at the end of all new roads, at no cost to Council and in accordance with approved plans and documents of development. This condition has been imposed under section 145 of the *Planning Act 2016*.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan).
42.	**Pathways**	
	Construct, at no cost to Council, a 2.0 metre wide reinforced concrete pathway in accordance with the approved pathway plan. This condition has been imposed under section 145 of the *Planning Act 2016.*	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan).

CONDITION		TIMING
RECONFIGURING A LOT - STAGE 3		
DEVELOPMENT ENGINEERING		
43.	**New Council Roads**	
A	Submit and have approved by Council, a development application for operational works for the following: All new roads and associated works. The following classifications are to be applied: 1. Modified Living Residential Road (16.5m) - From Lot 301 to 328 and 306 2. Driveway (10.0m) - From Lot 318 to 321. Design drawings are to be prepared and certified by a suitably qualified Registered Professional Engineer Queensland (RPEQ) and in accordance with the approved plans and documents of development and the MBRC Planning Scheme current at the time of the operational works application. Modified Living Residential Road - 16.5m wide. a. Two 4.0 metre wide travel lanes b. Kerb and Channel both sides c. One 4.5m wide verge made up of a 1.5m wide front verge, 2.0m wide pedestrian path and 1.0m wide verge. d. One 4.0m wide verge.	Prior to commencement of works associated with this condition.
B	Construct, at no cost to Council and in accordance with the approved plans and documents of development the following: 1. All new roads and associated works This condition has been imposed under section 145 of the *Planning Act 2016*.	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan).
44.	**Pathways**	
	Construct, at no cost to Council, a 2.0 metre wide reinforced concrete pathway in accordance with the approved pathway plan. This condition has been imposed under section 145 of the *Planning Act 2016.*	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan).
45.	**Refuse Collection - Bin Pads**	
	Provide concrete bin pads with a minimum dimension of 1m2 per bin along shared driveway to service Lots 317 to 322 in accordance with the approved plans and documents of development. The final location is to be clear of parking bays, driveways and street trees; and accessible to a left loading 12.5 metre long HRV. Note: A property note will be included on Council's electronic	Prior to submitting to the Council any request for approval of a plan of subdivision (i.e. a survey plan).

CONDITION		TIMING
	property system alerting future owners that bin pads have been provided for their use.	

ADVICES	
1.	**Aboriginal Cultural Heritage Act 2003**
	The *Aboriginal Cultural Heritage Act 2003* commenced in Queensland on April 16, 2004. The Act provides blanket protection of Aboriginal cultural heritage sites and places, including significant areas and objects, as well as archaeological remains. The Act also recognises that Aboriginal cultural heritage parties are key stakeholders in the assessment and management of Aboriginal cultural heritage. Under the Act, if a proposed activity involves disturbance of the ground surface, cultural heritage Duty of Care must be considered. This involves consideration of whether an activity is *likely* to harm Aboriginal cultural heritage. This may require involvement from the relevant Aboriginal cultural heritage party. Cultural heritage Duty of Care compliance ultimately lies with the person or entity conducting the activity, and penalty provisions apply for failing to fulfil this Duty of Care. Council strongly advises that before undertaking the land use activity, you refer to the cultural heritage duty of care - Department of Aboriginal and Torres Strait Islander Partnerships (Queensland Government) for further information regarding the responsibilities of the developer.
2.	**Adopted Charges**
	Payment of an Adopted Infrastructure Charge in accordance with Council's Charges Resolution (No. 10) dated 5 October 2022 or as amended apply to this development approval. From 1 July 2014, Moreton Bay Regional Council no longer issues an Infrastructure Charges Notice on behalf of Unitywater for water supply and sewerage networks and therefore a separate Infrastructure Charges Notice may be issued directly to the applicant by Unitywater in respect to this development approval. Payment of Infrastructure Charges is to be in accordance with the Infrastructure Charges Notice issued with this development approval and any Infrastructure Charges Notice issued by Unitywater. From 1 July 2014, all Infrastructure Charges for infrastructure networks controlled by Unitywater (eg. water and/or sewerage) regardless of when the Infrastructure Charges Notice was issued are to be paid directly to Unitywater while Infrastructure Charges for networks controlled by Moreton Bay Regional Council will continue to be paid directly to Moreton Bay Regional Council.
3.	**Biosecurity Act 2014 - Fire Ant Control**
	Significant portions of the Moreton Bay are within Fire Ant Biosecurity Zone 2 and must remain vigilant for the presence of fire ants. Under the Biosecurity Act 2014, individuals and businesses are responsible for ensuring that they follow the movement controls for specific organic materials to help prevent the spread of fire ants within South East

	Queensland's fire ant biosecurity zones. Movement of a fire ant carrier from within the fire ant biosecurity zone may need a biosecurity instrument permit. More information is available on https://www.fireants.org.au/treat/business-and-industry/movement-controls

PROPERTY NOTES	
1.	**DS01 Siting Requirements**
	The following property note will be attached to Council's database for Lots 101, 102, 105-107, 111, 113, 117, 118, 120, 121, 123, 127, 129, 130, 132, 133, 137, 141-143, 145-147, 150, 151, 154, 155, 202, 203, 206, 207, 211-213, 215, 216, 219, 221, 225, 228, 230, 301, 303-305, 308, 309, 311, 315, 316, 319, 321-323,: *"A plan has been approved by Council for this lot identifying how and/or where development on this lot is to occur. Any development on this lot must be in accordance with the approved plan and associated conditions.* *Further details can be found in the development permit creating the lot or the development approval for the use, and the associated Council report (Delegated or Council Meeting) or approval letter. This information is available through the PD Online facility on Council's website www.moretonbay.qld.gov.au."*
2.	**DS02 Bushfire Management**
	The following property note will be attached to Council's database for Lots 120-131, 153-159, 201-205, 214-232, 317-327: *"An approved Bushfire Management Plan applies to this lot. Any development on this lot must be in accordance with the approved Bushfire Management Plan and any conditions related to the approved plan.* *Further details can be found in the development permit creating the lot or the development approval for the use, and the associated Council report (Delegated or Council Meeting) or approval letter. This information is available through the PD Online facility on Council's website www.moretonbay.qld.gov.au."*
3.	**DS07 Additional Development Requirements**
	The following property note will be attached to Council's database for Lot 317 to 322: *"Additional development requirements apply to this lot. Any development on this lot must be in accordance with the approved plan and associated conditions.* *Further details can be found in the development permit creating the lot or the development approval for the use, and the associated Council report (Delegated or Council Meeting) or approval letter. This information is available through the PD Online facility on Council's website www.moretonbay.qld.gov.au."*

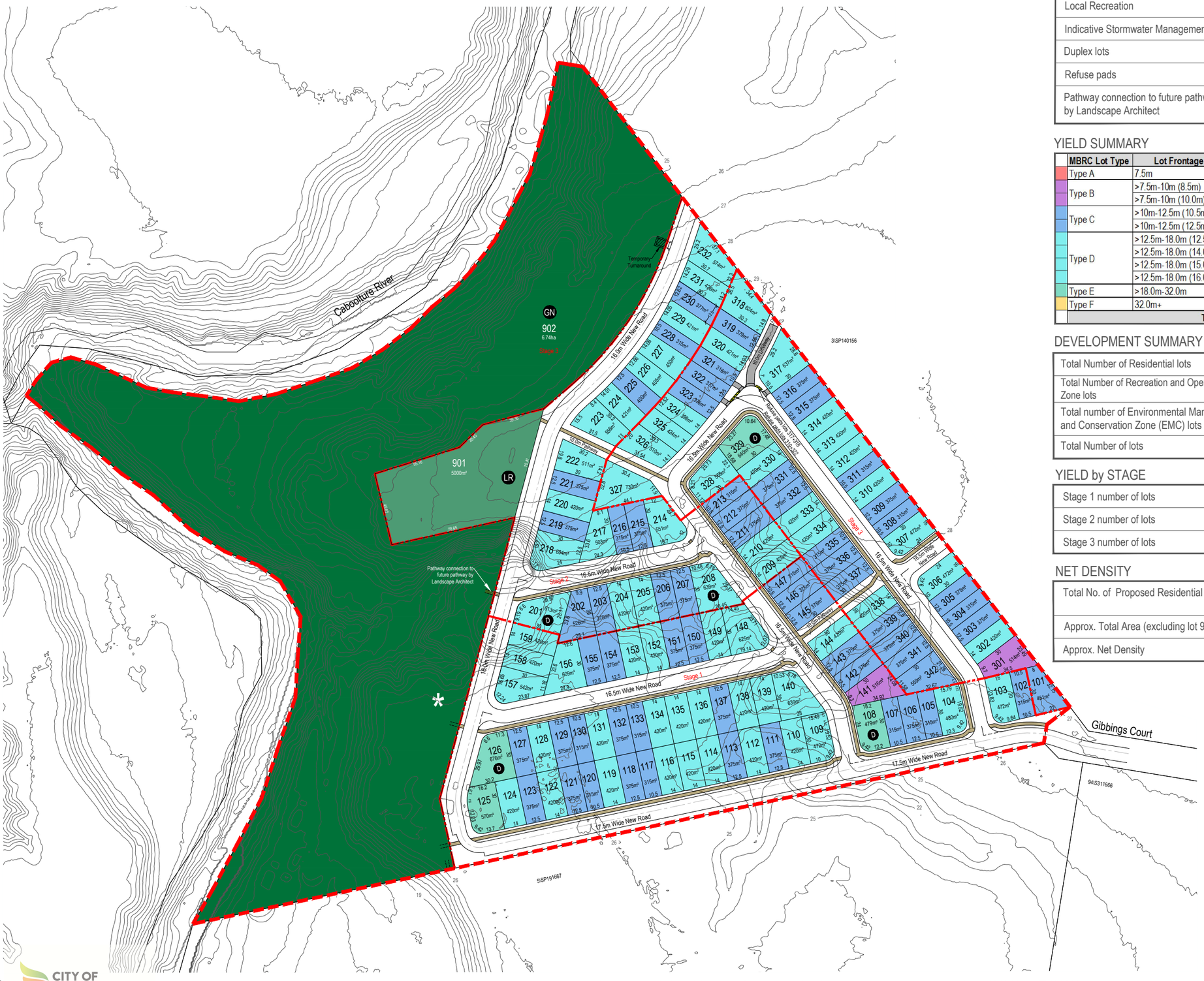
ATTACHMENT 3

Approved Plans / Documents

NORTH

0 50 100 150

1:2,500@A3



LEGEND

Site Boundary	
Stage Boundary	
Green Network precinct	GN
Local Recreation	LR
Indicative Stormwater Management Areas	*
Duplex lots	D
Refuse pads	
Pathway connection to future pathway by Landscape Architect	

YIELD SUMMARY

MBRC Lot Type	Lot Frontage	No.of Lots	%
Type A	7.5m	0	0.0%
Type B	>7.5m-10m (8.5m)	2	1.5%
	>7.5m-10m (10.0m)	0	0.0%
Type C	>10m-12.5m (10.5m)	19	14.3%
	>10m-12.5m (12.5m)	43	32.3%
Type D	>12.5m-18.0m (12.51m)	10	7.5%
	>12.5m-18.0m (14.0m)	47	35.3%
	>12.5m-18.0m (15.0m)	0	0.0%
	>12.5m-18.0m (16.0m)	8	6.0%
Type E	>18.0m-32.0m	4	3.0%
Type F	32.0m+	0	0.0%
	Total	133	100%

DEVELOPMENT SUMMARY - LOTS

Total Number of Residential lots	133
Total Number of Recreation and Open Space Zone lots	1
Total number of Environmental Management and Conservation Zone (EMC) lots	1
Total Number of lots	135

YIELD by STAGE

Stage 1 number of lots	58
Stage 2 number of lots	32
Stage 3 number of lots	43

NET DENSITY

Total No. of Proposed Residential Lots	128 + 5 Duplex lots
Approx. Total Area (excluding lot 902)	9.16ha
Approx. Net Density	15.1du/ha

CLIENT

ORCHARD Property Group

PROJECT

Plan of Subdivision

26 Gibbings Court,
Upper Caboolture

4 on SP191667

AMENDMENTS:		DATE:
A	Original	19.09.2022
B	Reduce Road + IR Items	25.08.2023
C	Add lot 101 to Stage 3	03.12.2024
D		
E		
F		
G		
H		

DESIGNED:	KS	DATE: 03.12.2024
DRAWN:	KS	DATE: 03.12.2024
SCALE:	1:2,500 @ A3	1 of 1

IMPORTANT NOTES:

This note is an integral part of this plan. This plan may not be reproduced without this note.

This plan was prepared for a Development Application. This plan should not be used for any other purposes.

This plan remains subject to, but not limited to, authority approval, detail design and final survey.

The total number of lots shown on this plan is approximate only.

No relevance should be placed on the information on this plan for any financial dealings involving the land.

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Colliers

DRAWING NUMBER:	ISSUE:
22-0320-PS1	C

CITY OF MORETON BAY

Approved Subject to Conditions of Decision Notice DA/2024/5622

26/02/2025

LEGEND

Site Boundary	
Stage Boundary	
Green Network precinct	GN
Local Recreation	LR
Indicative Stormwater Management Areas	*
Duplex lots	D
Pathway	
Refuse pads	
Pathway connection to future pathway by Landscape Architect	

LEGEND - Setbacks

Lots with a frontage 12.5m or less	
Mandatory Built to Boundary Wall (BTB)	
Mandatory Driveway Location	

CLIENT

ORCHARD Property Group

PROJECT

Plan of Development

26 Gibbings Court,
Upper Caboolture

4 on SP191667

AMENDMENTS:		DATE:
A	Original	21.09.2022
B	Reduce Road + IR Items	13.09.2023
C	Add lot 101 to Stage 3	03.12.2024
D		
E		
F		
G		
H		

DESIGNED:	KS	DATE: 03.12.2024
DRAWN:	KS	DATE: 03.12.2024
SCALE:	1:1,500 @ A3	1 of 1

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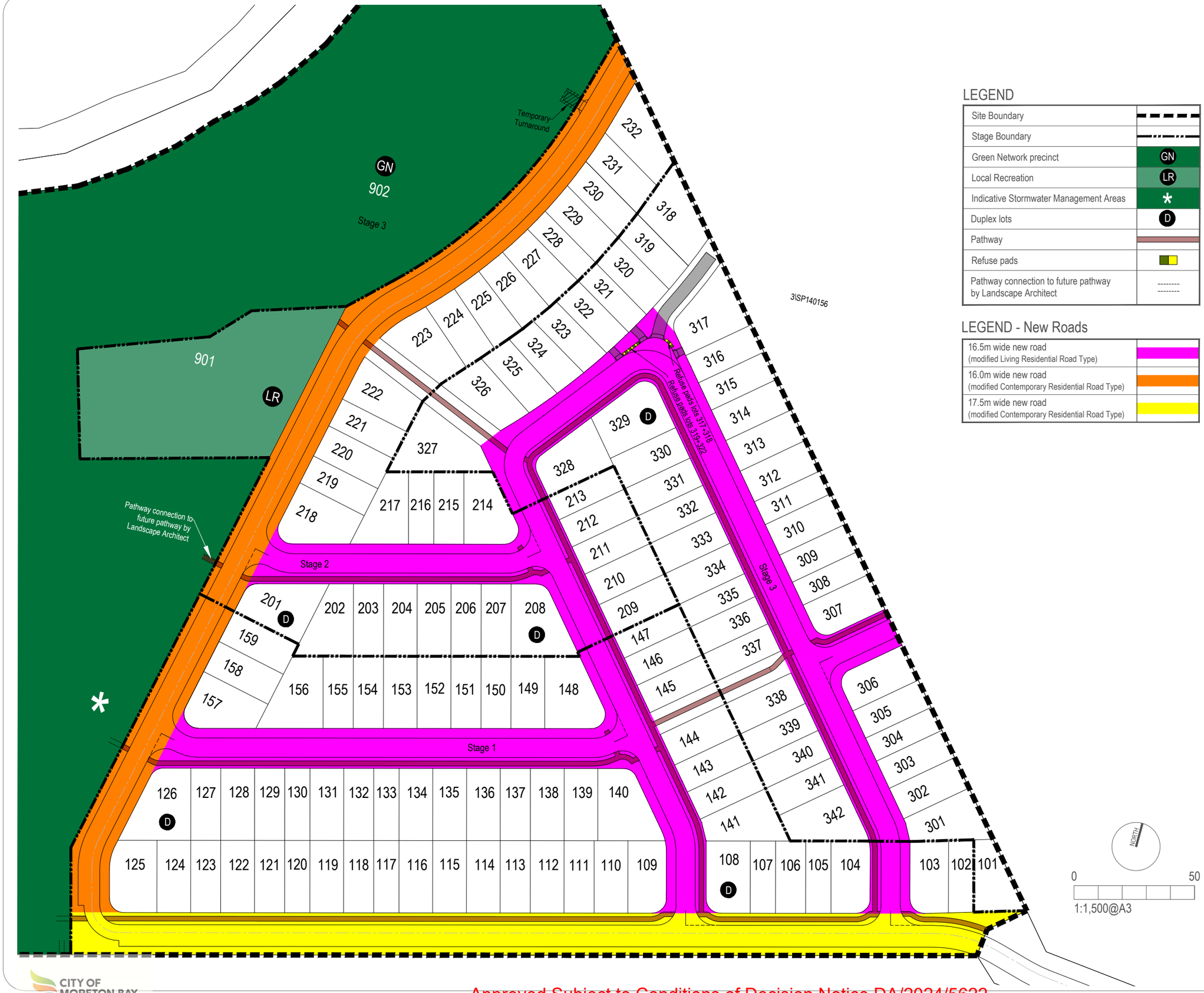
22-0320-PD1	C

CITY OF MORETON BAY

Approved Subject to Conditions of Decision Notice DA/2024/5622

26/02/2025



LEGEND

Site Boundary	
Stage Boundary	
Green Network precinct	GN
Local Recreation	LR
Indicative Stormwater Management Areas	*
Duplex lots	D
Pathway	
Refuse pads	
Pathway connection to future pathway by Landscape Architect	

LEGEND - New Roads

16.5m wide new road (modified Living Residential Road Type)	
16.0m wide new road (modified Contemporary Residential Road Type)	
17.5m wide new road (modified Contemporary Residential Road Type)	

CLIENT

ORCHARD Property Group

PROJECT

Road Hierarchy Plan

26 Gibbings Court,
Upper Caboolture

4 on SP191667

AMENDMENTS:		DATE:
A	Original	21.09.2022
B	Reduce Road + IR Items	13.09.2023
C	Add lot 101 to Stage 3	03.12.2024
D		
E		
F		
G		
H		

DESIGNED:	KS	DATE: 03.12.2024
DRAWN:	KS	DATE: 03.12.2024
SCALE:	1:1,500 @ A3	1 of 1

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DRAWING NUMBER:	ISSUE:
22-0320-PG2	C

CITY OF MORETON BAY

Approved Subject to Conditions of Decision Notice DA/2024/5622

26/02/2025

LEGEND

Site Boundary	
Stage Boundary	
Green Network precinct	GN
Local Recreation	LR
Indicative Stormwater Management Areas	*
Duplex lots	D
Refuse pads	
Pathway connection to future pathway by Landscape Architect	

LEGEND - Pathways

Pathway 2.0m	

CLIENT

ORCHARD Property Group

PROJECT

Pathway Hierarchy Plan

26 Gibbings Court,
Upper Caboolture

4 on SP191667

AMENDMENTS:		DATE:
A	Original	21.09.2022
B	Reduce Road + IR Items	13.09.2023
C	Add lot 101 to Stage 3	03.12.2024
D		
E		
F		
G		
H		

DESIGNED:	KS	DATE: 03.12.2024
DRAWN:	KS	DATE: 03.12.2024
SCALE:	1:1,500 @ A3	1 of 1

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DRAWING NUMBER:	ISSUE:
22-0320-PG3	C

CITY OF MORETON BAY

Approved Subject to Conditions of Decision Notice DA/2024/5622

26/02/2025

Gibbings Court, Upper Caboolture

LANDSCAPE CONCEPTS - DEVELOPMENT APPROVAL

Orchard (Gibbings) Developments Pty Ltd

Address	Gibbings Court, Upper Caboolture, QLD 4510
RPD	Lot 4 on SP191667
Client	Orchard (Gibbings) Developments Pty Ltd
Landscape Architect	SLR Consulting

DRAWING REGISTER	
DRAWING NUMBER	**DRAWING DESCRIPTION**
620.31050 - 001	COVERSHEET AND LOCALITY PLAN
620.31050 - 002	LANDSCAPE CONCEPT PLAN
620.31050 - 003	STREETSCAPE INTENT AND PLANT SCHEDULES
620.31050 - 004	LOCAL RECREATION PARK - LANDSCAPE CONCEPT PLAN
620.31050 - 005	RIPARIAN REHABILITATION CONCEPT
620.31050 - 006	PROPOSED TYPICAL PLANT SCHEDULES - BASED ON REGIONAL ECOSYSTEM MAPPING

ISSUE	DESCRIPTION	CHECKED	APPROVED	DATE
A	ISSUED FOR CLIENT REVIEW	DE	CW	14/10/2022
B	ISSUED FOR CLIENT REVIEW	DE	CW	18/10/2022
C	ISSUED FOR APPROVAL	DE	CW	18/10/2022

LOCALITY PLAN

NOT TO SCALE

SLR

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2022/4278

21/12/2023

LEGEND

Site boundary

Stage boundary

1. Parkland Esplanade Road
2. Internal Streetscape
3. Pedestrian Link
4. Auto Court to Lots 318,319 and 320
5. Stormwater Management Area
6. Local Recreational Park (620.31050 - 004)
7. 3m Pedestrian Pathway
8. Open Grassed Area
9. Concrete Turnaround
10. Rehabilitation Area (620.31050 - 005)

RIVER

CABOOLTURE

STAGE 3

STAGE 2

STAGE 1

STAGE 3

901

GIBBINGS COURT

SLR

Moreton Bay Regional Council

GIBBINGS COURT, UPPER CABOOLTURE ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD

LANDSCAPE CONCEPT PLAN

0 10 20 30 50 100m

SCALE 1:2000 @ A3

DATE 18.10.2021

DRAWING NO 620.31050 - 002

ISSUE C

Approved Subject to Conditions of Decision Notice DA/2022/4278

21/12/2023

PLANT SCHEDULE - STORMWATER MANAGEMENT AREA	
BASIN DRY BATTER	
TREES	
SPECIES NAME	COMMON NAME
Corymbia tessellaris	Moreton Bay Ash
Eucalyptus siderophloia	Grey Ironbark
Eucalyptus tereticornis	Forest Red Gum
Lophostemon suaveolons	Swamp Brush Box
Melaleuca linariifolia	Narrow-Leaved Paperbark
Melaleuca viminalis	Weeping Bottle Brush
Waterhousea floribunda	Weeping Lilly Pilly
SHRUBS	
Acacia disparrima	Hickory Wattle
Acacia fimbriata	Brisbane Wattle
Acacia lieocalyx	Early Flowering Wattle
Allocasuarina littoralis	Black She-Oak
GROUNDCOVERS	
Cymbopogon refractus	Barbed Wire Grass
Gahnia aspera	Orange Fruited Sword Sedge
Imperata cylindrica	Blady Grass
Juncus usitatus	Common Rush
Lomandra hystrix	Creek Mat Rush
Lomandra longifolia	Mat Rush
Themeda triandra	Kangaroo Grass
BASIN WET BATTER	
GROUNDCOVERS	
Lomandra longifolia	Mat Rush
Lomandra hystrix	Creek Mat Rush
BASIN FLOOR	
GROUNDCOVERS	
Ficinia nodosa	Knobby Club Rush
Ghania sieberiana	Red-Fruited Saw-sedge
Juncus usitatus	Common rush
Lomandra hystrix	Creek Mat Rush
Lomandra longifoilia	Spiny Headed Mat Rush

PLANT SCHEDULE - STREETSCAPES	
TREES	
Cupaniopsis anarcardiodes	Tuckeroo
Buckinghamia celsissima	Ivory Curl
Corymbia tessellaris	Moreton Bay Ash
Flindersia australis	Crows Ash
Flindersia schottiana	Bumpy Ash
Grevillea baileyana	White Oak
Harpullia pendula	Tulipwood
Lophostemon confertis	Brush Box
Melaleuca quinquenervia	Small leaved paperbark
Tristaniopsis laurina	Luscious Water Gum
Waterhousea floribunda	Weeping Lilly Pilly
Xanthostemon chrysanthus	Golden Penda
SHRUBS	
Doryanthes excelsa	Spear Lilly
Syzygium 'Aussie Boomer'	Aussie Boomer
Syzygium cascade	Lilly Pilly
Grevillea 'Orange Marmalade'	Grevillea
Grevillea 'Robyn Gordon'	Grevillea
GROUNDCOVERS	
Callistemon 'Little John'	Little John
Anigozanthos flavidus	Kangaroo Paw
Banksia 'Birthday Candles'	Birthday Candles
Dietes bicolour	Yellow Wild Iris
Grevilliea 'Bronze Rover'	Bronze Rover
Grevillea 'Royal Mantle'	Grevillea
Liriope muscari	Evergreen Giant
Lomandra longifoilia	Spiny Headed Mat Rush
Melaleuca linariifolia 'Claret Tops'	Claret Tops
Myoporum ellipticum	Creeping Boobialla

STREETSCAPE INTENT

- Establish a landscape character that complements the character of Moreton Bay Regional Council and the suburb of Upper Caboolture
- Create a street tree hierarchy within the development to improve wayfinding and enhance landmark locations (entry road, local park)
- Generally provide 1 street tree per lot (where possible) to offer protection from the sun, wind, glare and air borne pollution
- Provide shaded pedestrian pathway links within the internal layout of the development

Street Tree Planting Location Requirements:

The street tree placement is in accordance with Integrated Design – Appendix D Landscape Design and Street Trees and Moreton Bay Regional Council Standard Drawing SL-1000. The following minimum offsets from know feature apply:

- Streetlights 9.0 meters
- Driveways 2.5 meters from the edge of driveways, with root barrier installation
- Services pits/inspection boxes 3.0 meters
- Underground service locations 1.0 meter
- Stormwater kerb adaptors 1.0 meter
- Typically 1.0 meter from the back of kerb without root barrier and 0.6 meter from the back of kerb with root barrier installation
- Pedestrian crossings, 20.0 meters on approach & 6.0 meters on departure
- Energex pad mounted transformer 3.0 meters
- Fire hydrants 3.0 meters
- Receding corner 5.0 meters
- Approaching corner 15.0 meters
- Power pole 3.0 meters

Approved Subject to Conditions of Decision Notice DA/2022/4278

21/12/2023

LEGEND

Stage boundary

1. Streetscape shade tree planting
2. Maintenance access point (lockrail)
3. Bin Enclosures
4. 5 x 5 Shelter with table and chairs
5. Bubbler
6. Landmark tree
7. Small play space
8. Feature planting area
9. Kickabout space (Multipurpose space)
10. Seating location
11. Rehabilitation area (refer plan 620.31050 - 005)

LOCAL RECREATION PARK INTENT

A small park that provides visual amenity and passive recreation opportunities in an area with medium to high net residential density. Gibbing's Court local recreational park aims to enhance and celebrate the existing character and setting of the site. Bounded by the backdrop of the Caboolture River and proposed riparian rehabilitation corridor, the elevated kick-a-bout space offers sightlines through to the natural areas beyond. Enhancing the natural setting and character of the site.

With the incorporation of picnicking facilities and multipurpose shaded recreational opportunities, the Gibbing's Court local recreational park will be the centre of the Gibbing Court community.

The park layout provides a central meeting and picnicking point, where surveillance and interaction opportunities are found with the adjoining small play space. The park is linked to the broader community through the proposed 3m wide pathway network, offering opportunities for cycling and walking.

PLANT SCHEDULE - LOCAL PARK	
LANDMARK TREES	
SPECIES NAME	COMMON NAME
Araucaria bidwillii	Bunya Pine
Corymbia tessellaris	Moreton Bay Ash
Ficus macrophylla	Moreton Bay Fig
Grevillea robusta	Silky Oak
TREES	
Acacia podalyriifolia	Queensland Silver Wattle
Cupaniopsis anarcardiodes	Tuckeroo
Harpullia pendula	Tulipwood
Lophostemon confertis	Brush Box
Tristaniopsis laurina	Luscious Water Gum
Waterhousea floribunda	Weeping Lilly Pilly
Backhousea citrodora	Lemon Myrtle
SHRUBS	
Callistemon 'Endeavour'	Bottlebrush
Callistemon 'White Anzac'	Bottlebrush
Doryanthes excelsa	Spear Lilly
Melaleuca linariifolia"Claret Tops'	Claret Tops
Westringia fruticosa	Costal Rosemary
GROUNDCOVERS	
Anigozanthos flavidus	Kangaroo Paw
Banksia 'Birthday Candles'	Birthday Candles
Cissus antarctica	Kangaroo Vine
Cymbopogon citratus	Lemon Grass
Dicondra repens	Kidney Weed
Grevilliea 'Bronze Rover'	Bronze Rover
Grevillea 'Royal Mantle'	Grevillea
Hibbertia scandens	Climbing Guinea Flower
Imperata cylindrica	Blady Grass
Liriope muscari	Evergreen Giant
Lomandra longifoilia	Spiny Headed Mat Rush
Lomandra 'Verday'	Lomandra
Themeda triandra	Kangaroo Grass
Trachelospermum jasminoides	Star Jasmine

SLR

Moreton Bay Regional Council

GIBBINGS COURT, UPPER CABOOLTURE ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD

LOCAL RECREATION PARK - LANDSCAPE CONCEPT PLAN

0 5 10 15 25m

SCALE 1:500 @ A3

DATE	DRAWING NO	ISSUE
18.10.2021	620.31050 - 004	C

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21/12/2023

26 Gibbings Court, Upper Caboolture

Orchard (Gibbings) Developments Pty Ltd

Flood & Stormwater Management Plan

22-0039SMP01-V1

14 October 2022

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Report Contact:

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Document Control

22-0039SMP01-V1

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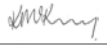
1	14/10/22	For Issue	DE	TS	KM		09298

CITY OF MORETON BAY

Approved Subject to Conditions of Decision Notice DA/2022/4278 21/12/2023

Executive Summary

Colliers Engineering & Design have been engaged by Orchard (Gibbings) Developments Pty Ltd to prepare a Flood and Stormwater Management Plan (FSMP) in support of a development application to Moreton Bay Regional Council (MBRC) over land located at 26 Gibbings Court, Upper Caboolture (Lot 4 on SP191667). This development application seeks a development permit for a Reconfiguration a Lot (ROL) to create 133 residential lots.

The site covers an area of 15.9ha and is consistent with a rural residential land use. The majority of the site is cleared with sporadic vegetation. The site is accessed by Gibbings Court from the south-eastern corner and is surrounded by private allotments to the north, east and south and Caboolture River to the west. A farm dam is located within the development footprint – this is intended to be filled as part of the proposed development.

Runoff from the site is to drain to the west to the balance flood planning area of the Caboolture River. The site is impacted by the medium and high risk flood hazard extent. The development footprint impacted by the MBRC flood hazard is intended to be filled. Earthworks within the site will fill the local drainage flowpath. The proposed development and changes within the balance of the catchment of this local flowpath will reroute flows, hence there is no need to maintain the flowpath following development. From discussions with MBRC and supported by hydraulic modelling within this investigation, it is considered that the earthworks within the local flowpathwill not impact flow conveyance or flood storage within the Caboolture River and thus, is considered an acceptable outcome. The proposed pad levels of the development exceed the flood planning level of 21.45 m AHD prescribed for the lot.

*This study adopts the flooding and stormwater management measures proposed in the approved Stormwater Management Plan for Caboolture West NDP1 (refer to **Appendix C**) completed by Calibre (2021) and is referred to as the 'NDP1 SMP' herein. NPD1 is located to the east of the development. The Developed Scenario hydrologic and hydraulic models developed as part of the NDP1 SMP have been adopted as the basis for the hydrologic and hydraulic model development. An 'Existing Case' scenario was developed, with the subcatchment containing the development discretised to enhance the granularity of the flow on the Caboolture River near the site. A 'Developed Case' scenario was developed, to determine the impact the 26 Gibbings Court development will have on the magnitude and timing of the peak flows to the Caboolture River.*

A hydrologic and hydraulic assessment was carried out to determine any potential impact the development would have on flows on the Caboolture River. The results of the modelling show that acceptable outcomes have been achieved for the developed scenario. The assessment found that non-worsening is achieved downstream from the proposed development, with no impacts sustained to surrounding property. No change is predicted in flood afflux or velocity as a result of the development, with mapping included to demonstrate the outcomes of the analysis. This satisfies legal point of discharge and no adverse off-site impact requirements prescribed under QUDM (2017) and the MBRC PSP (2015), respectively. This supports a no detention strategy for the site.

This plan utilizes Water Sensitive Urban Design Principles to achieve the performance criteria set by the MBRC Planning Scheme (2016) and State Planning Policy (2017). An end-of-line bioretention basin is proposed for treatment of stormwater flowing from the site. This report found that the end-of-line bioretention basin is to have a filter media area of 750 m^2.

The water quality modelling results found annual load reductions of Total Suspended Solids (TSS), Total Phosphorus, Total Nitrogen (TN) and Gross Pollutants (GP) between the Mitigated and Unmitigated Scenarios are to be achieved through the proposed bioretention basin.

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1. Introduction

Colliers Engineering & Design have been engaged by Orchard (Gibbings) Developments Pty Ltd to prepare a Flood and Stormwater Management Plan (FSMP) in support of a development application to Moreton Bay Regional Council (MBRC) over land located at 26 Gibbings Court, Upper Caboolture (Lot 4 on SP191667). This development application seeks a development permit for a Reconfiguration a Lot (ROL) to create 133 residential lots.

The proposed outcome of this document is to identify stormwater management options that could be implemented within the development to achieve the requirements and targets of Moreton Bay Regional Council (MBRC) Planning Scheme "Works Code" and "*Flood Hazard Overlay Code*" as well as the relevant provisions of State Planning Policy (SPP 2017). The intent of the codes associated with these documents will be achieved through the appropriate integration of stormwater management options within the proposed residential land-use. The objectives of this Stormwater Management Plan are to:

- Detail the proposed stormwater quality management strategy and how the load reduction objectives specified by the State Planning Policy (SPP, DSDIP 2017) and Schedule 10 of the MBRC Planning Scheme are achieved during the operational phase of the development.
- Consider suitable Stormwater Quality Improvement Devices (SQID's) based on Water Sensitive Urban Design (WSUD) principles.
- Outline the maintenance requirements for the proposed stormwater quality improvement devices.
- Ensure the development achieves non-worsening principles of stormwater flows downstream of the site and results in no off-site flood impacts;
- Demonstrate how the lawful point of discharge requirements for the site will be achieved; and
- Demonstrate flood immunity for the development.

The proposed Plan of Subdivision and concept engineering plans can be found in **Appendix A**.

1.1. Site Location

The location of the proposed development site is shown in **Figure 1-1**, with a total land holdings area covering 15.9 ha. The site is consistent with a rural residential land use. The majority of the site is cleared with sporadic vegetation. The site is accessed by Gibbings Court from the south eastern corner, with the site surrounded by private allotments to the north, east and south and Caboolture River to the west. A farm dam is located within the development footprint – this is intended to be filled as part of the proposed development.

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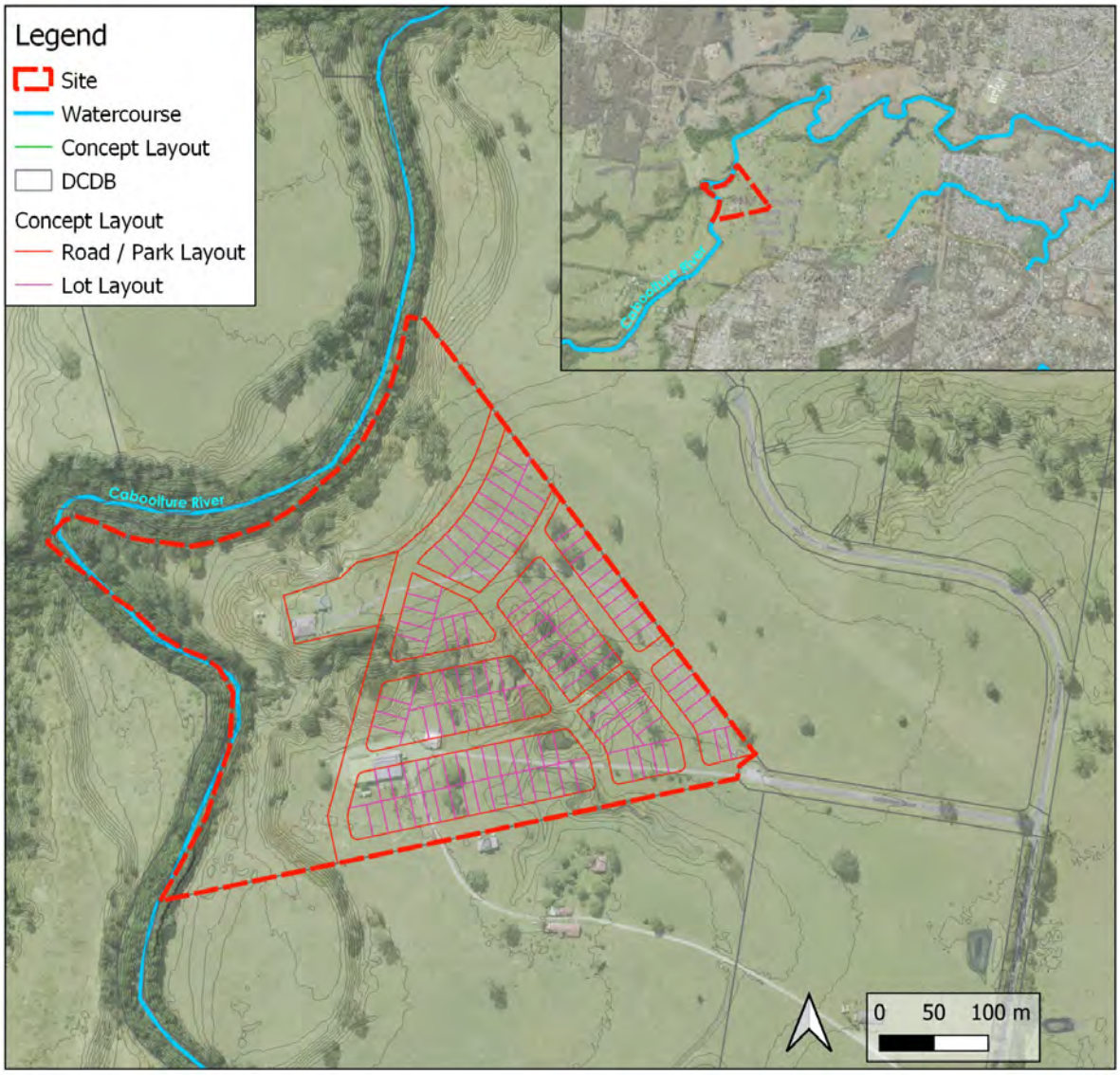

Figure 1-1: Site Location (Source: QGIS Open Street Maps)

1.2. Proposed Development Layout

The development application proposes the site to be developed as shown in **Figure 1-2.**

Major flows (up to and including the 1% AEP storm event) are to be collected by the road network, with runoff conveyed to the balance flood planning area of the Caboolture River.

Minor flows (up to and including the 10% AEP storm event) are to be collected by the stormwater network and routed to the bioretention basin proposed as part of the development. Runoff from the bioretention basin will discharge into the balance flood planning area.

It is proposed that flows from the external catchment south of the site will be diverted to the Caboolture River as part of the works to facilitate the future development of that site by Council.

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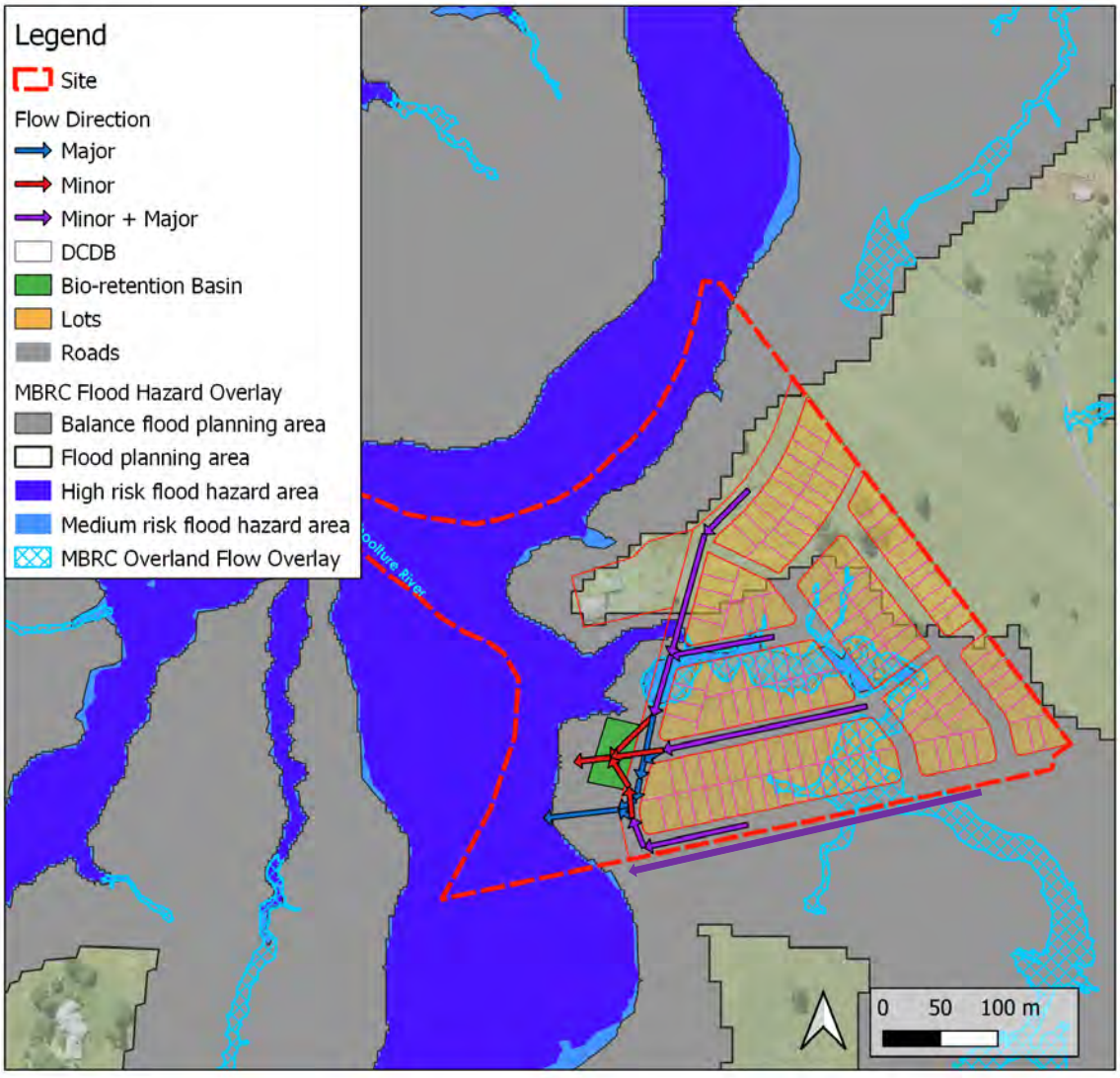

Figure 1-2: Flood Hazard and Overland Flow Overlay, with the Development Layout imposed

1.3. Flood Hazard Overlay and Overland Flow

The MBRC Flood Check Property Report for the lot occupying the development indicates that the flood hazard needs to be considered for this lot with Medium and High Risk Flood Hazard Areas impacted by the development footprint.

The development footprint impacted by the MBRC flood hazard is intended to be filled. The earthworks do not impact flood storage or flow conveyance along the Caboolture River, as supported by the flood modelling in the later stages of this report. It has been determined that the works are limited to the local catchment flowpath and which will become redundant with the modification of upstream catchments.

A property check of Lot 4 on Plan SP191667 provides a Defined Flood Level (DFE) of 20.7 m AHD and Flood Planning Level (FPL) of 21.75 m AHD (including 750 mm of freeboard). Refer to **Appendix B** for the MBRC Flood Check Development report. The proposed pad levels of the development exceed the flood planning level of 21.45 m AHD prescribed for the lot.

Overland flow south of the site and in the development footprint is to be collected by the stormwater and road network and directed west to the balance flood planning area of the Caboolture River.

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1.4. External Drainage Infrastructure

Drainage infrastructure, in the form of a swale, is proposed to collect overland flow from the existing gully south of the subject site, and divert flows west to the Caboolture River. These works are proposed to facilitate the future development and use of this property.

The rational method was applied to derive the 1% AEP peak flows (refer to **Appendix D** for calculations). Figure 1-3 shows a cross-section of the swale, alongside the assumed catchment boundary and percentage impervious. The nominated percentage imperviousness for the catchment is 60% - this is considered conservative, with the site intended to be developed into a sports field / recreation reserve.

The proposed drainage infrastructure and proposed earthworks enhances the usability of the site and is an effective approach in managing surface flows on the lot.

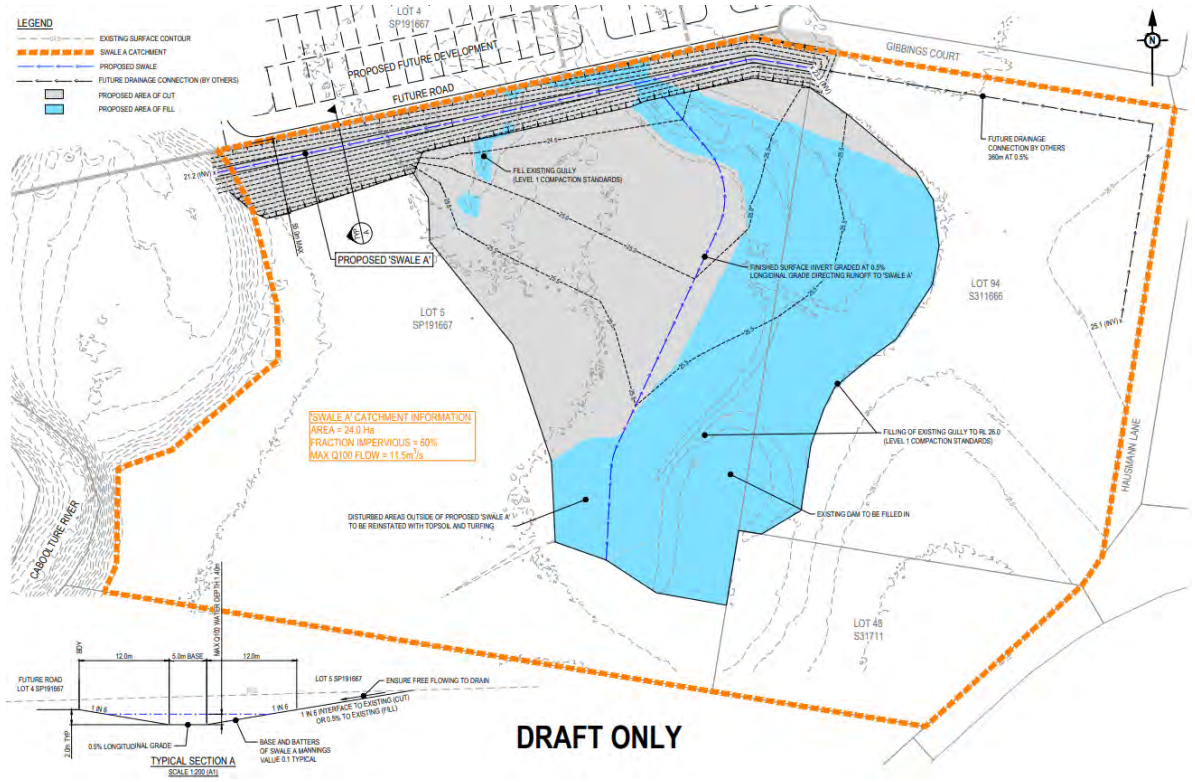

Figure 1-3: Swale Design

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1.5. Lawful Point of Discharge

As outlined by the Queensland Urban Drainage Manual (4th Edition – Institute of Public Works Engineering Australasia, Queensland Division) a test can be undertaken to determine whether a lawful point of discharge exists:

The criteria for determining the lawful point of discharge are:

(i) Will the proposed development alter the site's stormwater discharge characteristics in a manner that may substantially damage a third-party property (see Section 3.6)?

- If not, then no further steps are required to obtain tenure for a lawful point of discharge (assuming any previous circumstances and changes were lawful).

It is proposed that runoff from the proposed development site will be collected internally and discharge into the Caboolture River that traverses the western portion of the site.

It is considered that discharge from the site will be managed in such a manner as to not substantially damage third party property, and as a result it is considered that a suitable lawful point of discharge has been identified and achieved.

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2. Available Data

The data detailed in Table 2-1 was reviewed and used in this assessment.

Table 2-1: Summary of Study Data

ID	Data	Description
1	Digital Elevation Model	1 metre resolution digital elevation model (DEM) based on Aerial LiDAR survey captured by DERM in 2014 (vertical accuracy of +/- 200mm [2 sigma error rate])
2	Aerial Photograph	QGIS Google Satellite Imagery
3	Layout	AutoCAD layout of proposed development (22 August 2022 by Colliers Engineering & Design – 22-0320-PS1-A).
4	Adjoining SMP	Stormwater Management Plan prepared by Calibre Professional Services Pty Ltd dated 19 November 2021 (ref: 16-001367-SWMP-01C) for Caboolture West NDP1 (site to west)

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3. Hydrology

Moreton Bay Regional Council has developed a regional wide hydrology and flood model of the Caboolture River catchment, referred to as the 'CAB model' herein. Calibre modified the CAB model to account for the Caboolture West – NDP1 development, located to the east of the site. The stormwater management measures proposed as part of the development are documented in the Stormwater Management Plan for Caboolture West NDP1 (refer to **Appendix C**) completed by Calibre (2021) and is referred to as the 'NDP1 SMP' herein. The '*Developed Scenario'* hydrologic model developed as part of the NDP1 SMP has been adopted as the basis for the model development.

The hydrology model will represent inflows into the hydraulic model to assess the potential impacts from the development along the Caboolture River. Modelling has been carried out for the 63%, 10%, 5% and 1% Annual Exceedance Probability (AEP) storm events for the Base Case and Developed Case scenarios.

3.1. Catchments

The catchment delineation and percentage imperviousness values from the *Developed Scenario* NDP1 model was adopted as the basis for the model development.

The subcatchment containing the site at 26 Gibbings Court (CAB_01_23383) was discretised to three subcatchments (CAB_0A_23383, CAB_0B_23383, CAB_0C_23383) with the percentage impervious from the 'Existing Case' scenario applied for the catchment to reflect the current land use (rural residential). This forms the 'Base Case' (E01) of this assessment.

The Developed Case (D01) scenario has captured changes in the imperviousness to reflect the change in land use for the northern (CAB_0C_23383) and southern (CAB_0A_23383) subcatchment, containing the 26 Gibbings Court and Precinct 1 of the Stockland Development (Lot 2 on SP185212) respectively, from rural residential to Next Generation residential. No changes in the catchment delineation were undertaken as part of the Developed Case (D01) scenario model development. The consideration of both developments in the Developed Case is considered a conservative approach from a water quantity perspective, and it will inform the suitability of development along the Caboolture River.

An 85% imperviousness for the development footprint at 26 Gibbings Court (8.78 ha) and Precinct 1 of the Stockland Development (approximated 13.5 ha) were considered, in accordance with the tabulated Fraction Impervious value given for the 'Residential Zone Next Generation Neighbourhood Precinct' within Section 1.11.5.1 of the MBRC 'Appendix C – Integrated Design'. A comparison of the percentage impervious value applied for the three subcatchments (CAB_0A_23383, CAB_0B_23383, CAB_0C_23383) is provided in Table 3-1.

Table 3-1: Summary of Catchment Parameters

Sub-Catchment (Development)	NDP1	Base Case (E01)		Developed Case (D01)	
	Area (ha)	Area (ha)	Imperviousness %	Area (ha)	Imperviousness (%)
CAB_01_23883	72.126	-	-	-	-
CAB_0A_23383[1]	-	25.143	3	25.143	53.9
CAB_0B_23383	-	30.937	3	30.937	3
CAB_0C_23383[2]	-	16.586	3	16.586	45.7

1 Stockland Development Precinct 1

2 26 Gibbings Court Development

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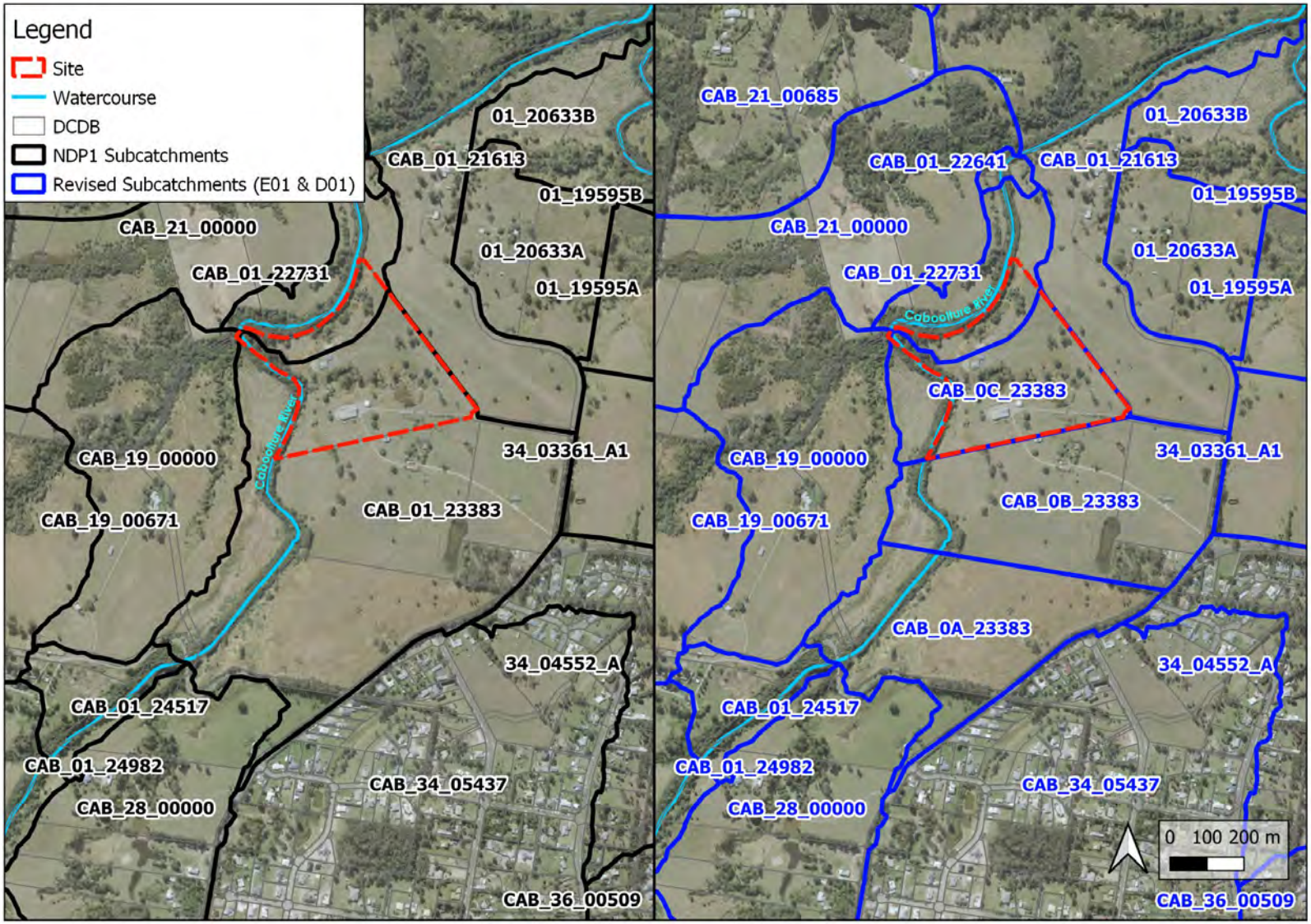

Figure 3-1: Comparison of Subcatchment Delineation (NDP1 SMP vs. E01 & D01)

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3.2. Modelling Parameters

Hydrology modelling has been setup to be consistent with Regional Floodplain Database 2014 Model Maintenance Report – Caboolture River Document (Section 2.1) and are summarised in Table 3-2. A catchment lag parameter of 1.6 is applied to the WBNM model.

Table 3-2: WBNM Model Losses

Catchment	Initial Loss (mm)	Continuing Loss (mm/hr)
<5% AEP	15	2.5
>2% AEP	0	2.5

3.3. Peak Flow Rates

A comparison of the peak flows predicted at subcatchment CAB_01_22641, downstream of the subject site, is presented below in Table 3-3.

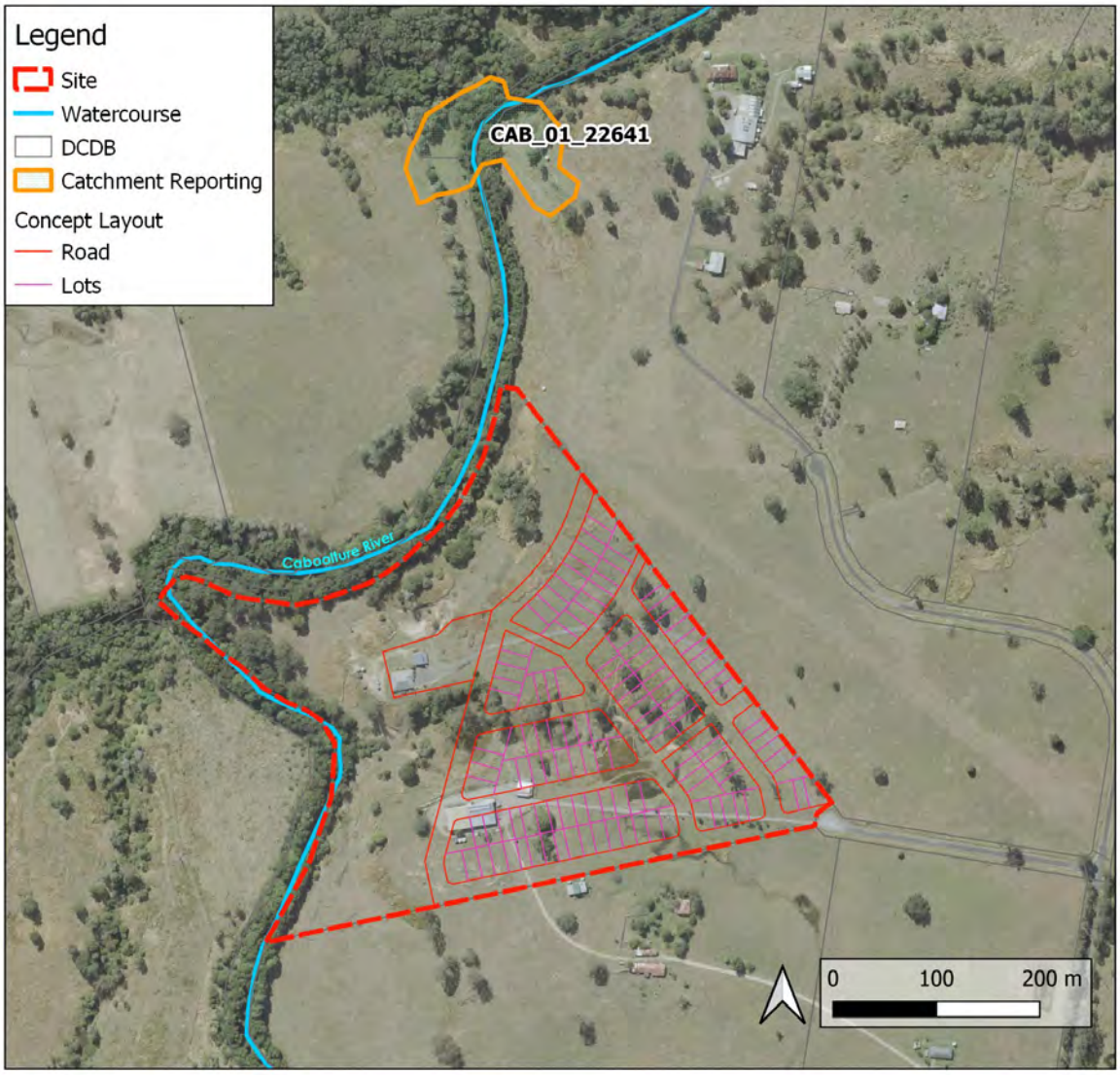

Figure 3-2: Downstream Reporting Catchments

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A comparison of peak flows at the outlet of catchment CAB_01_22641 for the 63%, 10%, 5% and 1% Annual Exceedance Probability (AEP) storm events is presented in Table 3-3, with Figure 3-2 showing the predicted hydrographs for the 1% AEP 360 minute (critical duration) storm event. A reduction in the peak flow rates is reported downstream of the site for all assessed storm events at the reporting catchment. This satisfies the condition of non-worsening and is not likely to generate nuisance to downstream properties.

Table 3-3: Peak Flow Verification Comparison (Caboolture River (downstream of the site), from subcatchment CAB_01_22461)

	Event (AEP %)			
	63	**10**	**5**	**1**
Existing Case (m^3/s)	147.40	412.48	508.86	794.36
Proposed Case (m^3/s)	147.40	412.45	508.77	794.21
Difference (m^3/s)	0.00	-0.03	-0.09	-0.15

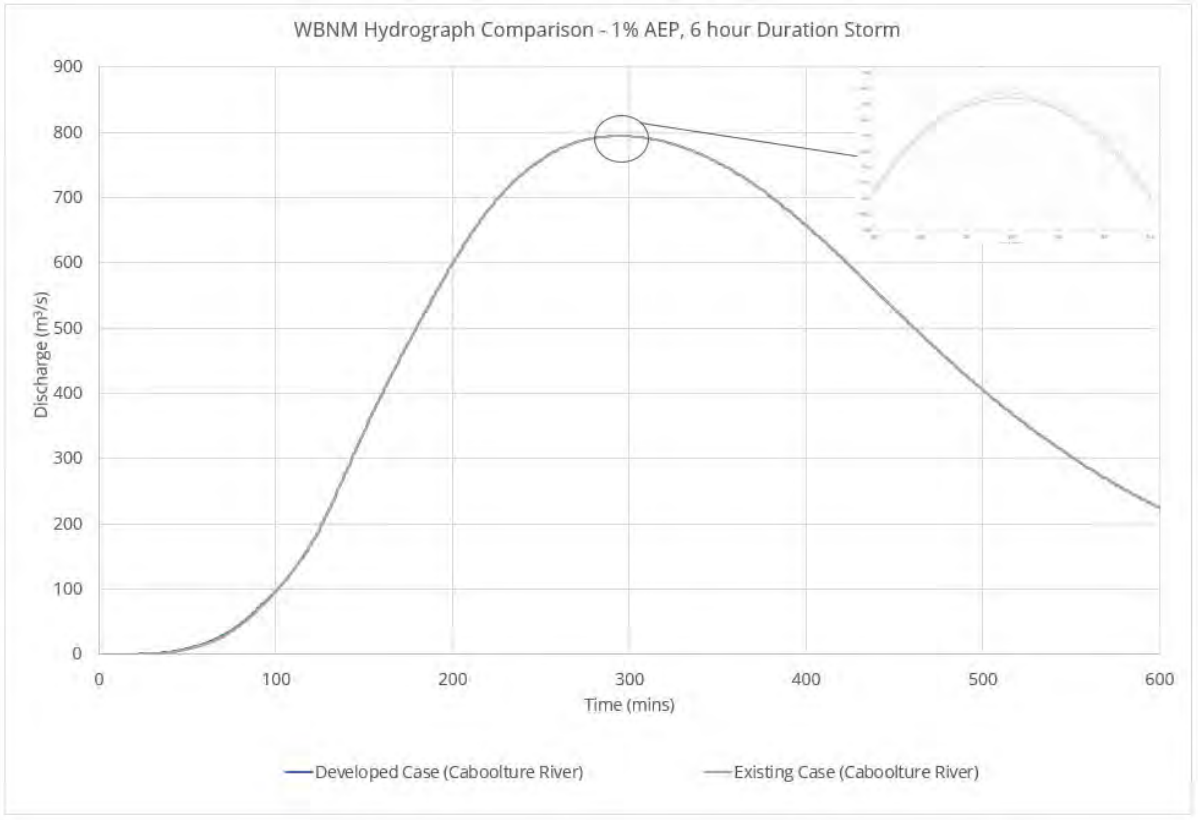

Figure 3-3: Hydrograph Comparison across the two reporting catchments.

To inform whether a no-detention strategy can be implemented for 26 Gibbings Court, a definitive assessment of the flood conditions downstream of the site are better informed using a hydraulic model. The proposed development has been prescriptively included in the NPD1 TUFLOW hydraulic model for which a spatial assessment of the flood impacts has been undertaken for a range of design event magnitudes. This is discussed in detail in the following section.

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4. Hydraulics

Hydraulic modelling has been carried out using TUFLOW software developed by BMT WBM. TUFLOW is a computational engine that provides one-dimensional (1D) and two-dimensional (2D) solutions for the free-surface flow equations to simulate flood and tidal wave propagation. The Heavily Parallelised Compute (HPC) computational method has been applied using 2020-10-AB version of TUFLOW. Modelling assumptions and outcomes are described below.

4.1. Model Setup

The Base Case (E01) and Proposed (P01) scenarios are described below:

- **Base Case (E01)** Model has been developed as the basis for change in which to assess the impacts of the development of the site. This modelling scenario adopted the assumptions pertaining to the manning's (n) roughness, tailwater boundary conditions and structures from the *Developed Case* completed as part of the Caboolture West NDP1 flood study and hydraulic model, developed by Calibre (2021) (refer to **Appendix C**). The existing case (E01) inflows from the WBNM hydrology model have been incorporated into the hydraulic model setup.
- **Developed (D01):** Model adopts the Base Case (E01) model, with changes to the topography and hydrology incorporated to reflect the proposed development. The developed case (D01) inflows from the WBNM hydrology model have been incorporated into the hydraulic model setup.

4.1.1. Topography

The TUFLOW model topography is based upon the DEM that was created from 2014 LiDAR. No changes to the topography were applied for the Base Case (E01). For the Developed Case (D01), a topographic amendment in the form of a 2d_zsh shapefile was applied into the model, representing the proposed earthworks of the development.

The grid cell size configuration is maintained from the NDP1 hydraulic model. The catchment has been represented using a 10m hydraulic grid size, with a 2.5m grid cell size applied over the critical area of investigation (NDP1 & subject site) using a quadtree mesh.

4.1.2. Inflow

Inflows have been incorporated into the model setup using inflow polygons (2d_sa) to read in the inflow hydrographs from the WBNM hydrology model. The inflow hydrographs developed as part of the developed case scenario hydrology, representing the development of 26 Gibbings Court and Precinct 1 of the Stockland Development (Lot 2 on SP185212) respectively, have been applied into the model. In the developed case scenario, discharge from the site has assumed to be directed into the flood hazard area located west of the site.

4.2. Results – Base Case Scenario (E01)

The existing scenario flood maps are shown in **Appendix E**. This details the existing flood extent and behaviour in relation to the development site. The results of this have been used as the basis for assessing the potential impacts that may result from the development.

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4.3. Results – Developed Scenario (D01)

The developed scenario flood maps are shown in **Appendix F**. This details the proposed flood extent and behaviour in relation to the development site. An indicative lot plan is overlaid on this map set to highlight how the development relates to the catchment. Discussion is presented below as to how the proposed development achieves non-worsening and design outcomes in relation to:

- Peak Discharge
- Flood Afflux
- Change in Flood Velocity
- Waterway Stability

4.3.1. Peak Discharge

The assessment found that the peak discharge downstream of the site are predicted to decrease across all modelled events. **Table 4-1** compares the Existing and Proposed peak flows from the reporting line (along the northern boundary of the subject site, refer to **Figure 4-1**) for the 63.2% and 1% AEP storm events. The reduction in peak flow is a result of the increase in responsiveness of the post-development peak flows generated from the catchment containing the development. It is considered that non-worsening of flows within the receiving waterway has been demonstrated and mitigation measures (i.e., detention basin) are not recommended.

Table 4-1: Existing and Proposed Peak discharge at Reporting Line NDP1-SEQW.

AEP	Critical Duration (min)	Base Case Peak Flow (m^3/s)	Proposed Case Peak Flows (m^3/s)	Difference (m^3/s)	Difference (%)
63.2%	360	153.92	153.88	-0.04	-0.02%
1%		799.96	799.86	-0.10	-0.01%

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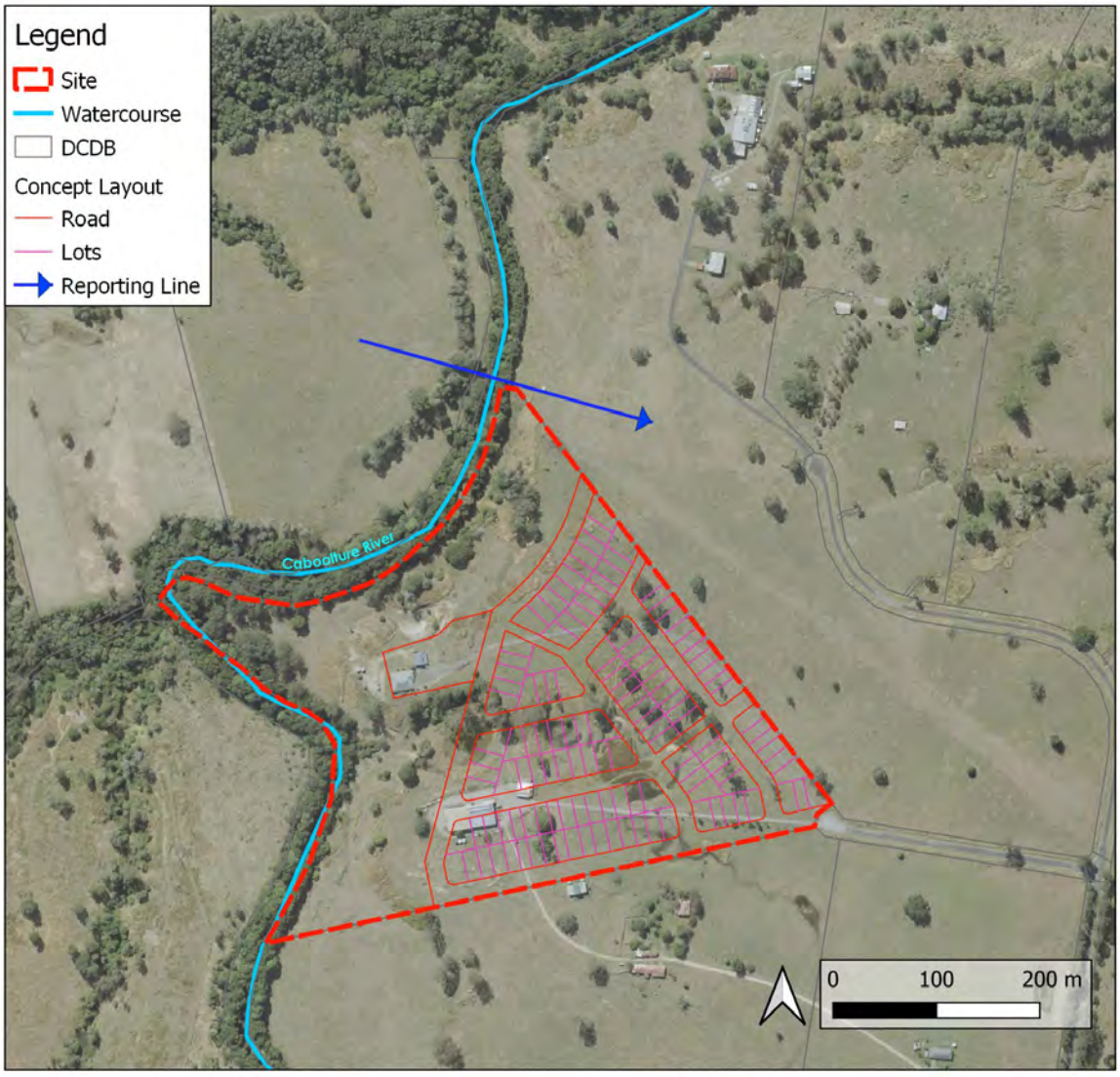

Figure 4-1: Location of the Reporting Line, in context to the subject site

4.3.2. Flood Afflux

Afflux mapping has been undertaken for the 63.2%, 10%, 5% and 1% AEP to identify whether there are any flood impacts resulting, and if so, whether an alternative development arrangement needs to be investigated. Afflux maps have been provided in **Appendix G**.

The afflux mapping shows that there is no afflux occurring external to the development site. As noted above in **Table 4-1**, there is a reduction in peak flow noted downstream of the development, which correlates to there being no flood impacts external to the site.

4.3.3. Change in Flood Velocity

Change in velocity mapping has been undertaken for the 63.2%, 10%, 5% and 1% AEP to identify whether there were any impacts to downstream waterway velocity resulting. Change in velocity maps have been provided in **Appendix H**. Mapping show there is generally no change (+/- 0.1m/s) along the waterways across all events. It is therefore considered the development does not impact flow velocities in the receiving waterways.

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4.3.4. Waterway Stability

A requirement of the State Planning Policy (SPP) and Moreton Bay Regional Council Schedule 10 is to manage waterway stability in frequent 1 year ARI flood events. The objective of the SPP is to "limit the peak 1-year ARI event discharge within the receiving waterway to the pre-development peak 1-year ARI discharge".

The results of the hydrologic modelling found a minor decrease in the 1 year ARI (63% AEP) peak flows at the reporting location downstream of the subject site, along with no afflux as shown in **Appendix G.** This satisfies the requirements of the SPP and Table 10.2.1 of the Moreton Bay Regional Council Planning scheme Schedule 10 for waterway stability management.

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5. Stormwater Quality

5.1. Design Objectives

This report identifies the stormwater quality management objectives for the operational phase (post-construction phase) of the proposed development. Construction based stormwater quality management objectives will need to be addressed as part of operational works documentation.

Schedule 10 of the Moreton Bay Regional Council Planning Scheme (2020) defines the post-construction phase Water Quality Objectives for Next Generation Neighbourhood is to be based on the load-based Water Quality Objectives (WQO's) stipulated in the State Planning Policy (DILGP, 2017) for the Southeast Queensland region, as shown in Table 5-1.

Table 5-1: Site Stormwater Quality Objectives (Operational Phase)

Minimum reductions in mean annual loads from unmitigated development (%)			
Total Suspended Solids (TSS)	**Total Phosphorous (TP)**	**Total Nitrogen (TN)**	**Gross pollutants >5 mm**
80	60	45	90

5.2. Stormwater Quality Treatment

5.2.1. Strategy

The objective of this report is to assess the stormwater quality measures required based on the development layout to support the development application. Runoff from the development will be collected in a stormwater drainage system and discharged into a bioretention basin prior to being discharged from the site.

This report sizes the required bioretention system to treat runoff from the proposed development of this site only.

5.2.2. MUSIC Parameters

An assessment of stormwater runoff quality from the existing conditions and proposed developed conditions has been undertaken using the Model for Urban Stormwater Improvement Conceptualisation (MUSIC) – Version 6.3, released in 2018.

Climate data for the catchment was sourced from the MUSIC model database. The rainfall and evaporation data template for this site has been based on data from Dayboro (40063) from 1/1/1980-31/12/1989 with six (6) minute rainfall duration.

Table 5-2 and Table 5-3 outline the adopted source node parameters from "MUSIC Modelling Guidelines" (Water By Design, 2010) that were used in the MUSIC model.

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Table 5-2: Urban Land Use (Split Source Nodes) - Pollutant Export Parameters

Land Use	Parameter	Total Suspended Solids (Log_{10} mg/L)		Total Phosphorous (Log_{10}mg/L)		Total Nitrogen (Log_{10}mg/L)	
		Storm Flow	Base Flow	Storm Flow	Base Flow	Storm Flow	Base Flow
Ground	Mean	2.18	1.0	-0.47	-0.97	0.26	0.20
	Std Deviation	0.39	0.34	0.31	0.31	0.23	0.20
Road	Mean	2.43	1.0	-0.30	-0.97	0.26	0.20
	Std Deviation	0.39	0.34	0.31	0.31	0.23	0.20
Roof	Mean	1.30	N/A	-0.89	N/A	0.26	N/A
	Std Deviation	0.39	N/A	0.31	N/A	0.23	N/A

Table 5-3: MUSIC Runoff Generation Parameters

Parameter	Urban	Open Space / Rural Residential
Rainfall Threshold (mm)	1	1
Soil Capacity (mm)	500	98
Initial Storage (%)	10	10
Field Capacity	200	80
Infiltration Capacity Coefficient a	211	84
Infiltration Capacity Coefficient b	5	3.3
Initial Depth (mm)	50	50
Daily Recharge (%)	28	100
Daily Drainage (%)	27	20
Daily Deep Seepage Rate (%)	0	0

5.2.3. Catchment Areas

The development site has been split into three catchments containing split source nodes (road, roof and ground) representing total developed area reporting to the bioretention basin. Table 5-4 outlines the catchment areas and imperviousness represented within the MUSIC model. The stormwater quality catchments are provided in Figure 5-1.

Table 5-4: Catchment Areas

Catchment	Total Area (ha)	Road (ha)	Roof (ha)	Ground (ha)
	9.18	3.06	2.86	3.26
Imperviousness (%)		60	100	20

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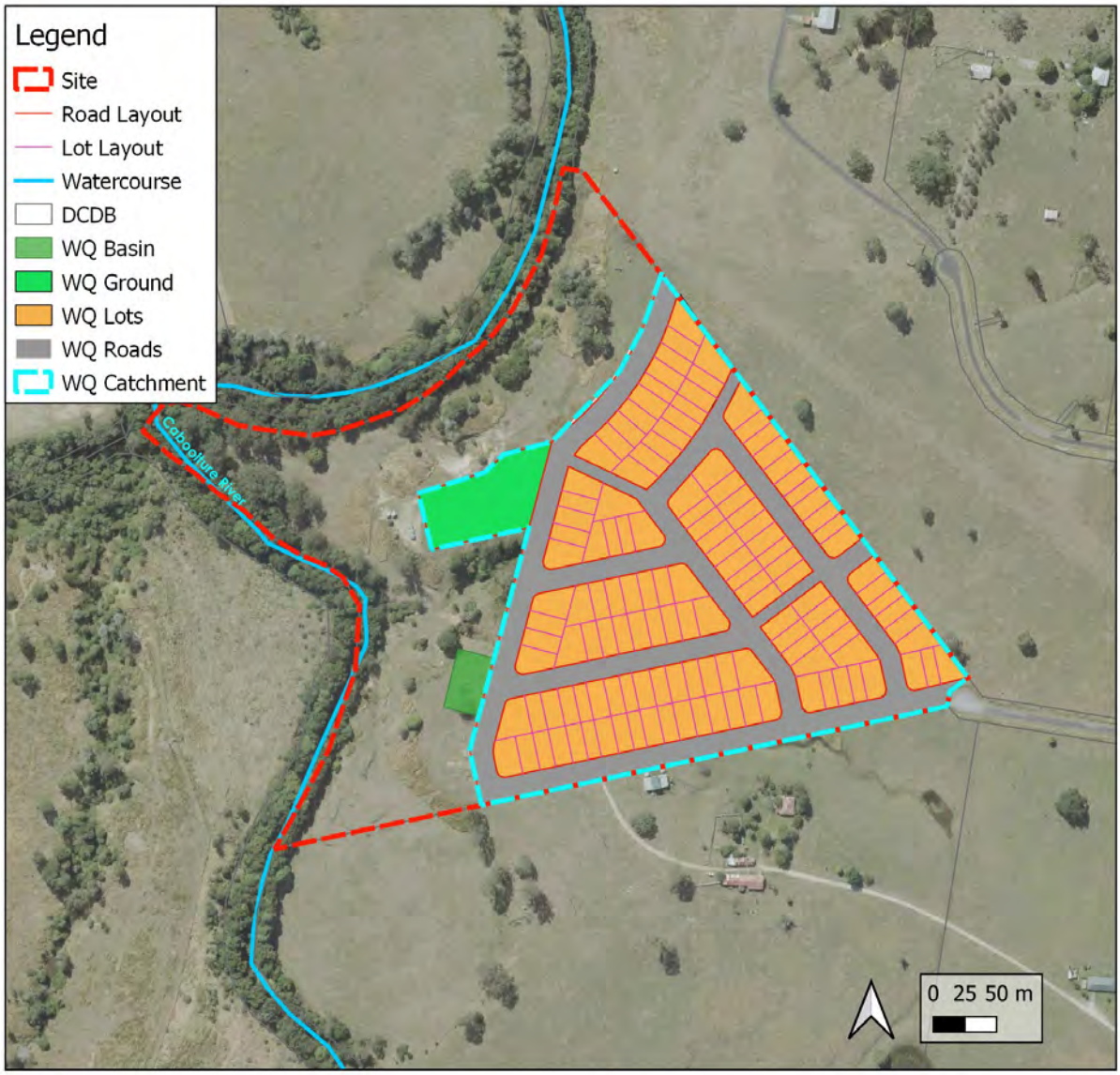

Figure 5-1: WSUD Catchment Locality Plan

5.2.4. MUSIC Model Layout

As the management of urban stormwater needs to take a holistic approach, specific management measures need to be implemented in series to form a treatment train. The correct utilisation of various devices within the treatment train is imperative to target the desired pollutants, from the gross solids to the fine colloidal partials. Figure 5-2 shows the MUSIC model layout for the development.

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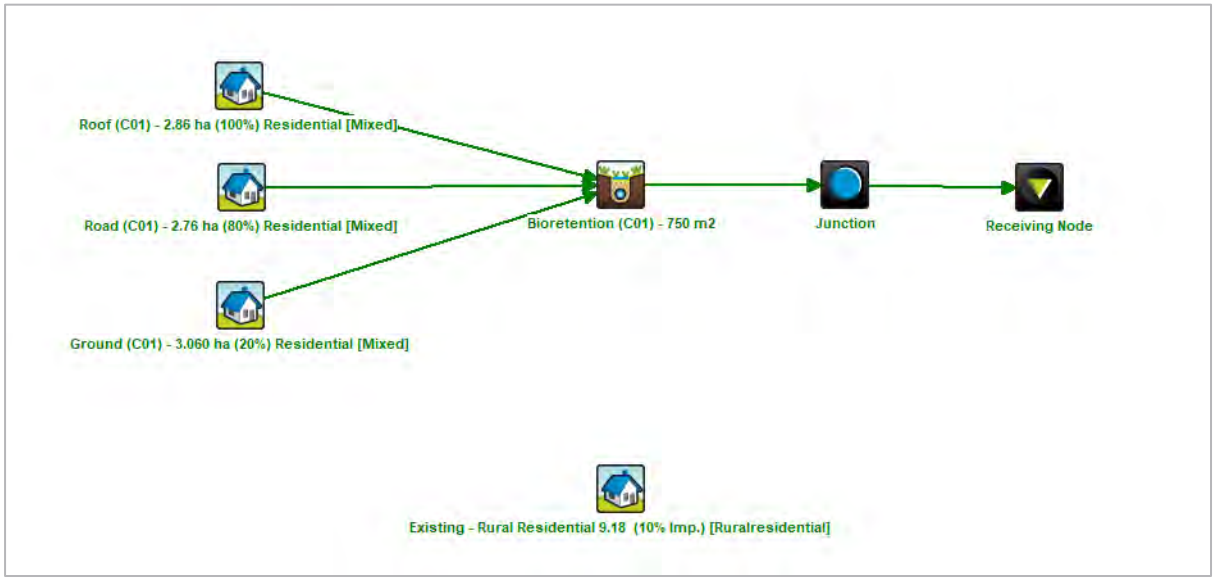

Figure 5-2: MUSIC Model Layout

5.3. Treatment Measures

Runoff from the development will be treated through an end-of-line bioretention basin device. The potential locality of the treatment devices servicing the development is shown in Figure 5-1.

5.3.1. Bioretention System

Bioretention systems use ponding above a treatment surface to maximise the volume of runoff flowing through the filtration media. They typically convey flows above the design event through overflow pits or a weir. The treatment system operates by firstly filtering surface flows through surface vegetation and then percolating runoff through prescribed filtration media. This media provides treatment through fine filtration, extended detention and biological uptake of nutrients.

As these systems take approximately 12-24hrs to drain, the maximum depth of pondage allowed to occur over the filter area has been limited to 300mm, with a minimum filter media depth of 500mm. Table 5-5 summarises the proposed design parameters for the main bioretention system for this development. As noted above this may be split into several devices on detailed design. It is to be noted that the Orthophosphate content of the filter media has been reduced to 30mg/kg in line with recent advice from Healthy Waterways.

(http://healthywaterways.org/initiatives/waterbydesign/stormwater).

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Table 5-5: Bioretention Design Parameters

Parameter	Bioretention Basin
Extended Detention Depth (m)	0.30
Storage Surface Area (m^2)	750
Filter Media Area (m^2)	750
Unlined Filter Media Perimeter (m)	0.01
Saturated Hydraulic Conductivity (mm/hr)	200
Filter Depth (m)	0.5
TN Content of Filter Media (mg/kg)	400
Orthophosphate Content of Filter Media (mg/kg)	30
Exfiltration Rate (mm/hr)	0.0

5.3.2. Sediment Forebays

The WaterByDesign's *Bioretention Technical Design* Guideline, recommends that a sediment forebay be installed when the contributing catchment to a bioretention basin is greater than 2 ha. As the catchment reporting to the proposed basin exceeds 2 ha (9.18 ha) a sediment forebay is required for this development.

5.4. Results

MUSIC modelling of the proposed treatment train for the developable area of the development at 26 Gibbings Court was performed to ensure the WQO's were achieved. Table 5-6 and Table 5-7 presents the load-based outputs that are represented by this application. The results show the mitigated scenario, which achieves compliant load reductions, produced less pollutant loads than the existing case and satisfies the requirements set out by Schedule 10 of the MBRC Planning Scheme.

Table 5-6: MUSIC Results – Load Based Pollutant Outputs

Pollutant	Unmitigated (kg/yr)	Mitigated (kg/yr)	Reduction Achieved (%)	Target Reduction	Compliance
TSS	14700	2830	80.7	80%	✓
TP	28.70	7.88	72.5	60%	✓
TN	158.0	80.1	49.3	45%	✓
GP	1710	0	100.0	90%	✓

Table 5-7: MUSIC Results - Load Based Pollutant Outputs (Existing Vs Mitigation)

Pollutant	Existing (kg/yr)	Mitigated (kg/yr)	Difference
TSS	15800	2,830.00	-12,970.00
TP	15.20	7.88	-7.32
TN	119.0	80.1	-38.9
GP	530	-	-530

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6. Construction Phase Management

6.1. Erosion and Sediment Control

The management of the site during the construction phase is an important step in ensuring water quality standards are achieved. Implementation of best practice Erosion and Sediment Control techniques is imperative to managing the quality of runoff affected by construction works.

The following points provide general guidance on the management of stormwater during the construction phase. Detailed Erosion and Sediment Control Management Plans should be developed in conjunction with the Operational Works design prior to construction works commencing in accordance with the International Erosion Control Association (IECA) - "*Best Practice Erosion and Sediment Control (BPESC) document*" and overseen by a Certified Professional in Erosion and Sediment Control (CPESC) or Registered Professional Engineer Queensland (RPEQ).

1. Establish a single stabilised entry/exit point for the site works;
2. Construct a shake-down grid at the entrance to facilitate the removal of sediment from trucks leaving the site. The access road extending from the end of existing road or kerb to the grid should comprise a 150-200mm deep pad of 40mm crushed rock;
3. Install sediment fences along the lower boundaries of the site;
4. Construct one or more strategically placed sediment basins in the proposed drainage reserve and construct contour drains / bunds to direct disturbed runoff to the sediment basins;
5. Install bins and/or wind-proof litter areas on-site to minimise the dispersion of gross pollutants;
6. Maintain on site sufficient materials necessary for the emergency repair of all erosion control devices. This includes silt fences, clean crushed rock for reapplication to the entrance road and for replacement of rock within temporary drainage channels, and flocculants for settling sediment basins;
7. Following each day's construction works, ensure that any material on road surfaces is swept from the road, and not permitted to be washed down the gutters and piped drainage systems;
8. Quality of pooled water within sediment basins are to be monitored prior to dewatering, sufficient time should be given to allow sediment to settle (possible with the assistance of a suitable flocculent if necessary) &/or filtering during pumping operations; and
9. Final establishment of bioretention basin should not occur until full stabilisation of upstream catchment has occurred; preferably these should be temporarily turfed during the maintenance period while dwelling construction is occurring.

It shall be the responsibility of the developer, through their principal contractor, to ensure that temporary sediment and erosion controls are installed and maintained correctly.

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7. Establishment and Operational Phase Management

7.1. Establishment

Experience shows that the critical periods in the life of WSUD vegetated stormwater systems are the construction and establishment phases. The timing and approach to these systems must be carefully considered to ensure successful establishment and long-term performance. Bioretention systems are now common stormwater treatment devices for new urban developments in Queensland. Successful construction and allowing adequate time for the systems to establish is critical to their long-term performance and function. Construction of the system is also linked to having suitable bioretention designs in place to ensure, civil contractors have appropriate plans to construct to. Applying due care in the design and construction phase will ensure the function of the system whilst also keeping on-going maintenance to a minimum. It is highly recommended that the constructed activities be completed in accordance with *the Construction and Establishment Guidelines: Swales, Bioretention Systems and Wetlands (Apr 2010).* This will require a sacrificial turf layer to be installed to protect the filter media from the building phase.

7.2. Operational

It is not proposed for water quality monitoring of the bioretention system to be undertaken during the operational phase of its life. The *"Maintaining Vegetated Asset"* guideline highlights that water quality monitoring is not recommended to determine the performance of every vegetated stormwater asset, as it is a specialized field that is complex and costly. In line with this guideline the on-going monitoring of water quality from this device is not considered necessary considering the small size of the development.

The bioretention system will be maintained by MBRC, who as the asset custodian, will be responsible for the on-going maintenance of the water quality device. Maintenance for the bioretention basin may involve the following:

1. Scheduled inspections;
2. Removal of noxious plants or weeds;
3. Maintaining the desired vegetation;
4. Repairing erosion;
5. Unblocking inlets and outlets;
6. Removing litter and debris;
7. Managing algal or moss growth; and
8. Maintaining the permeability of the filtration.

Operations and maintenance should be conducted in accordance with the *Maintaining Vegetated Stormwater Assets* (Feb 2012) guideline.

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8. Conclusion

Colliers Engineering & Design have been engaged by Orchard (Gibbings) Developments Pty Ltd to prepare a Flood and Stormwater Management Plan (FSMP) in support of a development application to Moreton Bay Regional Council (MBRC) over land located at 26 Gibbings Court, Upper Caboolture (Lot 4 on SP191667). This development application seeks a development permit for a Reconfiguration a Lot (ROL) to create 133 residential lots.

The site covers an area of 15.9ha and is consistent with a rural residential land use. The majority of the site is cleared with sporadic vegetation. The site is accessed by Gibbings Court on the southern-eastern corner, private allotments to the north, east and south and Caboolture River to the west. A farm dam is located within the development footprint – this is intended to be filled as part of the proposed development.

Runoff from the site is to drain to the west to the balance flood planning area of the Caboolture River. The site is impacted by the medium and high risk flood hazard extent. The development footprint impacted by the MBRC flood hazard is intended to be filled. Earthworks within the site will fill the local drainage flowpath. The proposed development and changes within the balance of the catchment of this local flowpath will reroute flows, hence there is no need to maintain the flowpath following development. From discussions with MBRC and supported by hydraulic modelling within this investigation, it is considered that the earthworks within the local flowpath will not impact flow conveyance or flood storage within the Caboolture River and thus, is considered an acceptable outcome. The proposed pad levels of the development exceed the flood planning level of 21.45 m AHD prescribed for the lot.

This study adopts the flooding and stormwater management measures proposed in the approved Stormwater Management Plan for Caboolture West NDP1 (refer to Appendix C) completed by Calibre (2021) and is referred to as the 'NDP1 SMP' herein. NPD1 is located to the east of the development. The Developed Scenario hydrologic and hydraulic models developed as part of the NDP1 SMP have been adopted as the basis for the hydrologic and hydraulic model development. An 'Existing Case' scenario was developed, with the subcatchment containing the development discretised to enhance the granularity of the flow on the Caboolture River near the site. A 'Developed Case' scenario was developed, to determine the impact the 26 Gibbings Court development will have on the magnitude and timing of the peak flows to the Caboolture River.

A hydrologic and hydraulic assessment was carried out to determine any potential impact the development would have on flows on the Caboolture River. The results of the modelling show that acceptable outcomes have been achieved for the developed case scenario. The assessment found that non-worsening is achieved downstream from the proposed development, with no impacts sustained to surrounding property. No change is predicted in flood afflux or velocity as a result of the development, with mapping included to demonstrate the outcomes of the analysis. This satisfies legal point of discharge and no adverse off-site impact requirements prescribed under QUDM (2017) and the MBRC PSP (2015), respectively. This supports a no detention strategy for the site.

The treatment measures proposed for the development site achieve the performance criteria set by the MBRC Planning Scheme (2020) and SPP (July 2017). Annual Load Reductions of Total Suspended Solids (TSS), Total Phosphorus, Total Nitrogen (TN) and Gross Pollutants (GP) between the Mitigated and Unmitigated Scenarios have been achieved.

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This plan demonstrates that effective treatment of stormwater at the proposed development can be achieved through the integration of Water Sensitive Urban Design (WSUD) principles. The plan demonstrates:

- Compliance with the requirements of the MBRC Planning Scheme and SPPs Load Based Objectives through the incorporation of an end of line bioretention basin (750m^2)
- Non-worsening is achieved at the reporting location downstream of the development site.
- No change in flood afflux or velocity as a result of the development.

We therefore request Council approval of the engineering components for the proposed development with reasonable and relevant conditions. Detailed design may result in changes to the proposed strategy; however, the design objectives will be maintained.

CITY OF MORETON BAY
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9. References

- Stormwater Management Plan – Caboolture West NDP1 (Calibre Professional Services Pty Ltd ,2021)
- Moreton Bay Regional Council (MBRC) Planning Scheme 2020;
- http://www.bom.gov.au/water/designRainfalls/revised-ifd (Bureau of Meteorology, Online Rainfall IFD Data System);
- State Planning Policy (Department of Infrastructure, Local Government and Planning, 2017);
- Australian Rainfall and Runoff (Institute of Engineers Australia, 2019);
- Queensland Urban Drainage Manual – 4th Edition (Institute of Public Works Engineering Australasia, Queensland Division, 2017);
- MUSIC Modelling Guidelines Version 1.0 (Water by Design, 2010);
- Maintaining Vegetated Stormwater Assets (Water by Design, 2012); and
- Construction and Establishment Guidelines: Swales, Bioretention Systems and Wetlands (Water by Design 2012).

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Appendices

Appendix A Reconfiguration of Lot Plan & Concept Engineering Drawings

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PROPOSED RESIDENTIAL DEVELOPMENT

26 GIBBINGS COURT, UPPER CABOOLTURE
FOR 'ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD'

DRAWING LIST

EARTHWORKS, ROADWORKS AND DRAINAGE

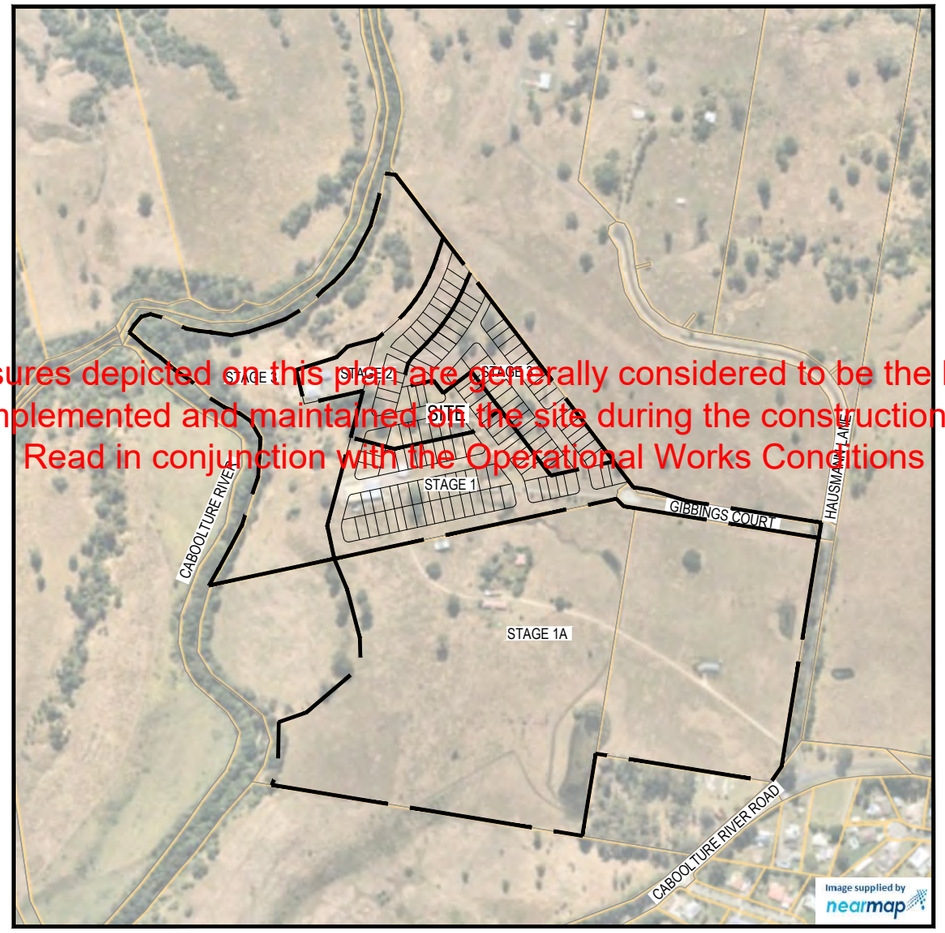
22-0039-P100	COVER PLAN
22-0039-P101	CONCEPT BULK EARTHWORKS LAYOUT PLAN SHEET 1
22-0039-P102	CONCEPT BULK EARTHWORKS LAYOUT PLAN SHEET 2
22-0039-P103	CONCEPT BULK EARTHWORKS LAYOUT PLAN SHEET 3
22-0039-P104	CONCEPT BULK EARTHWORKS TYPICAL SECTIONS
22-0039-P105	CONCEPT ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 1
22-0039-P106	CONCEPT ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 2
22-0039-P107	CONCEPT ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 3
22-0039-P108	CONCEPT TYPICAL ROAD CROSS SECTIONS
22-0039-SK01	DRAINAGE CONCEPT PLAN (LOT 5 SP191667 & LOT 94 S311666)

STORMWATER QUALITY

22-0039-P200	CONCEPT BIO RETENTION BASIN LAYOUT PLAN

SEWERAGE AND WATER RETICULATION

22-0039-P300	CONCEPT SEWERAGE AND WATER LAYOUT PLAN SHEET 1
22-0039-P301	CONCEPT SEWERAGE AND WATER LAYOUT PLAN SHEET 2
22-0039-P302	CONCEPT SEWERAGE AND WATER LAYOUT PLAN SHEET 3



LOCALITY PLAN
SCALE 1:4000 (A1)
SCALE 1:8000 (A3)

N

PROJECT INFORMATION SUMMARY:
No. OF LOTS = 133
AREA OF SITE = 15.9ha
RP DESCRIPTION LOT 4 SP191667
DATUM LEVEL AND LOCATION PM9101 RL 25.32 AHD
LOCAL AUTHORITY: MORETON BAY REGIONAL COUNCIL

The measures depicted on this plan are generally considered to be the MINIMUM to be implemented and maintained on the site during the construction phase. Read in conjunction with the Operational Works Conditions

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
1	14.10.22	RD	JL	ORIGINAL ISSUE

DRAWN

DESIGN

STATUS: NOT FOR CONSTRUCTION

APPROVED: TROY SCHULTZ RPEQ 20631 DATE 14.10.22

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE: AS SHOWN

CLIENT: ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD

ASSOCIATED CONSULTANT: LANDPARTNERS 07 3842 1000

PROJECT NAME: PROPOSED RESIDENTIAL DEVELOPMENT

26 GIBBINGS COURT UPPER CABOOLTURE

DRAWING TITLE: COVER PLAN

PROJECT No.	DRAWING No.	REVISION
22-0039	P100	1

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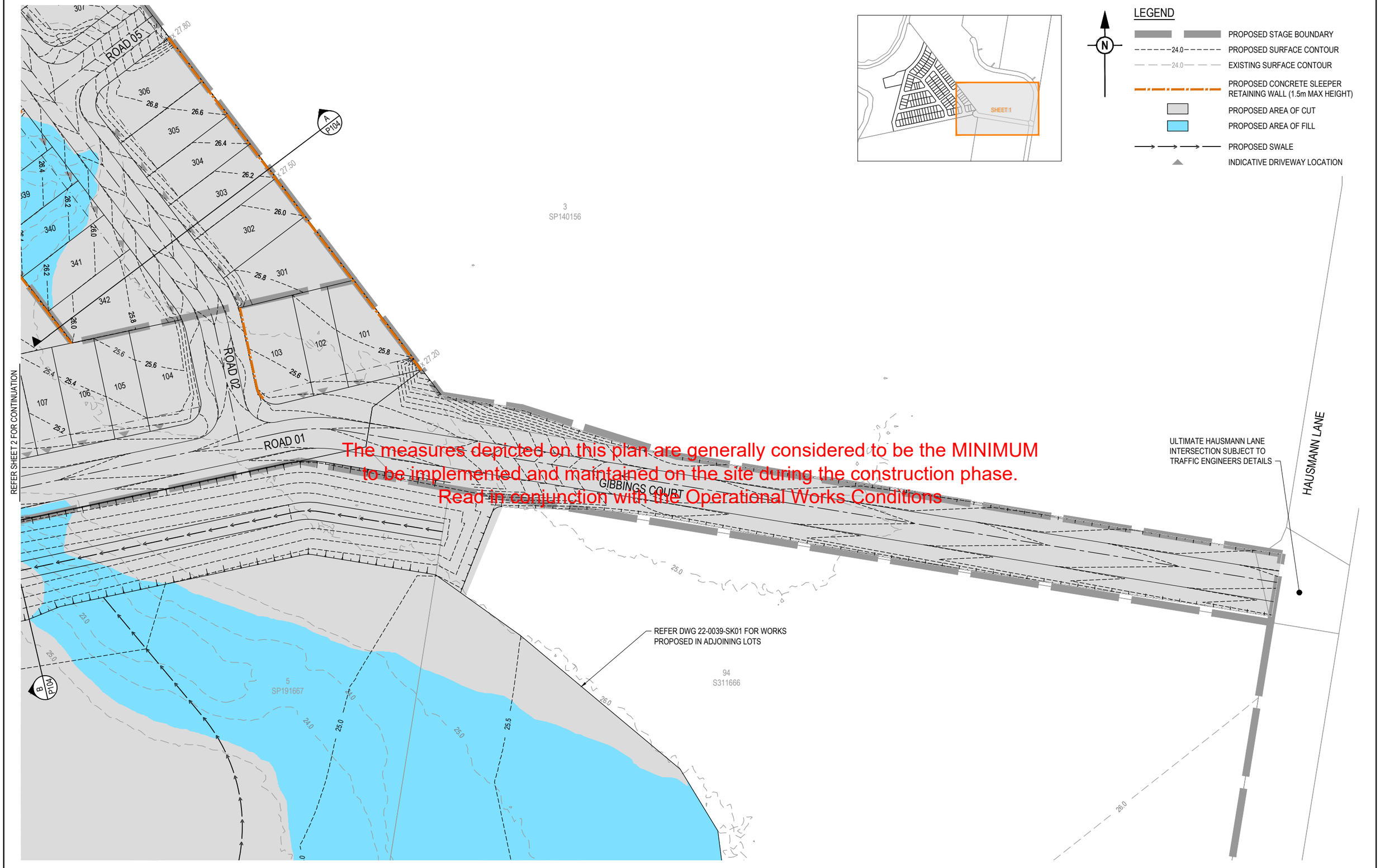

The measures depicted on this plan are generally considered to be the MINIMUM to be implemented and maintained on the site during the construction phase. Read in conjunction with the Operational Works Conditions

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
1	14.10.22	RD	JL	ORIGINAL ISSUE

DRAWN

DESIGN

STATUS: NOT FOR CONSTRUCTION

APPROVED: TROY SCHULTZ RPEQ 20631 DATE: 14.10.22

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN (QLD) PTY LTD

Colliers

SCALE: 1:500 / 1:1000 — 10 5 0 10 20 — A1 / A3

CLIENT: ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD

ASSOCIATED CONSULTANT: LANDPARTNERS 07 3842 1000

PROJECT NAME: PROPOSED RESIDENTIAL DEVELOPMENT

26 GIBBINGS COURT UPPER CABOOLTURE

DRAWING TITLE: CONCEPT BULK EARTHWORKS LAYOUT PLAN SHEET 1

PROJECT No.	DRAWING No.	REVISION
22-0039	P101	1

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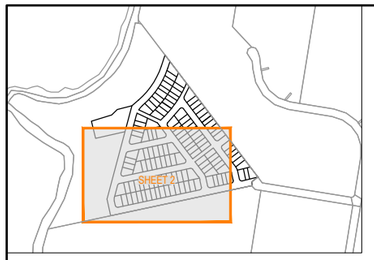
REFER SHEET 1 FOR CONTINUATION



NOTE: REFER TO SHEET 1 FOR LEGEND

ROAD 01

ROAD 02

ROAD 03

ROAD 04

BASIN

C P104

B P104

0.5% MIN

REFER DWG 22-0039-SK01 FOR WORKS PROPOSED IN ADJOINING LOTS

5 SP191667

REFER SHEET 4 FOR CONTINUATION

REFER SHEET 1 FOR CONTINUATION

The measures depicted on this plan are generally considered to be the MINIMUM to be implemented and maintained on the site during the construction phase. Read in conjunction with the Operational Works Conditions

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
1	14.10.22	RD	JL	ORIGINAL ISSUE

DRAWN

DESIGN

STATUS: NOT FOR CONSTRUCTION

APPROVED: TROY SCHULTZ RPEQ 20631 DATE 14.10.22

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE: 1:500 / 1:1000 — 10 5 0 10 20 — A1 / A3

CLIENT: ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD

ASSOCIATED CONSULTANT: LANDPARTNERS 07 3842 1000

PROJECT NAME: PROPOSED RESIDENTIAL DEVELOPMENT

26 GIBBINGS COURT UPPER CABOOLTURE

DRAWING TITLE: CONCEPT BULK EARTHWORKS LAYOUT PLAN SHEET 2

PROJECT No.	DRAWING No.	REVISION
22-0039	P102	1

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The measures depicted on this plan are generally considered to be the MINIMUM to be implemented and maintained on the site during the construction phase.
Read in conjunction with the Operational Works Conditions

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
1	14.10.22	RD	JL	ORIGINAL ISSUE

DRAWN

DESIGN

STATUS: **NOT FOR CONSTRUCTION**

APPROVED: TROY SCHULTZ RPEQ 20631 DATE: 14.10.22

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN (QLD) PTY LTD

Colliers

SCALE: 1:500 / 1:1000 — 10 5 0 10 20 — A1 / A3

CLIENT: **ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD**

ASSOCIATED CONSULTANT: LANDPARTNERS 07 3842 1000

PROJECT NAME: **PROPOSED RESIDENTIAL DEVELOPMENT**

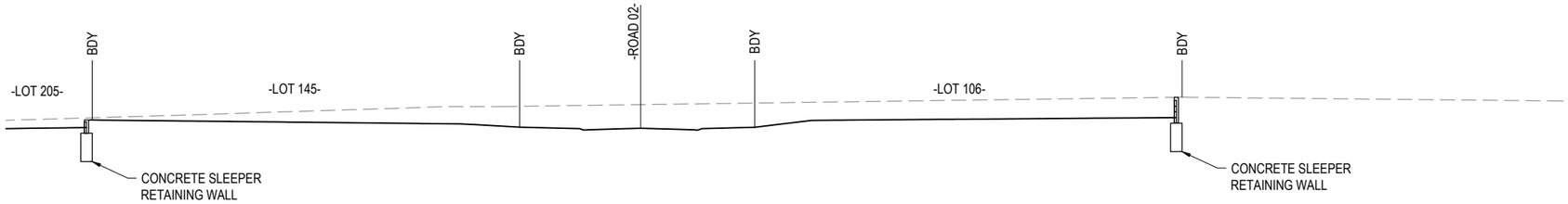
26 GIBBINGS COURT
UPPER CABOOLTURE

DRAWING TITLE: **CONCEPT BULK EARTHWORKS LAYOUT PLAN SHEET 3**

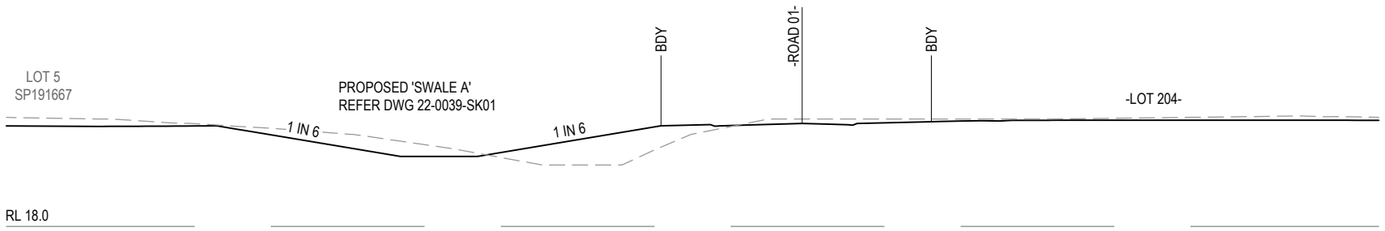
PROJECT No.	DRAWING No.	REVISION
22-0039	P103	1

CITY OF MORETON BAY

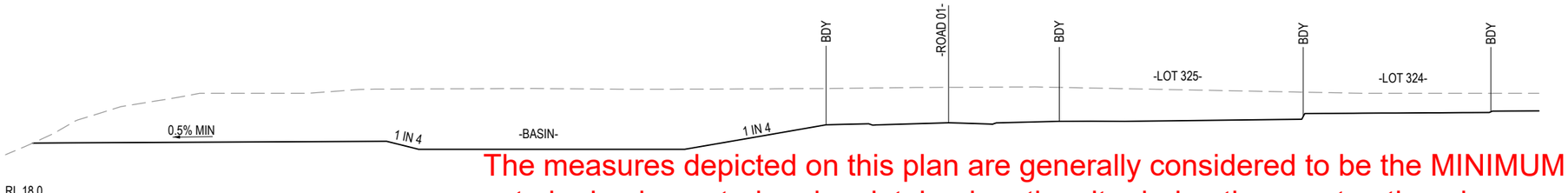
Approved Subject to Conditions of Decision Notice DA/2022/4278 21/12/2023



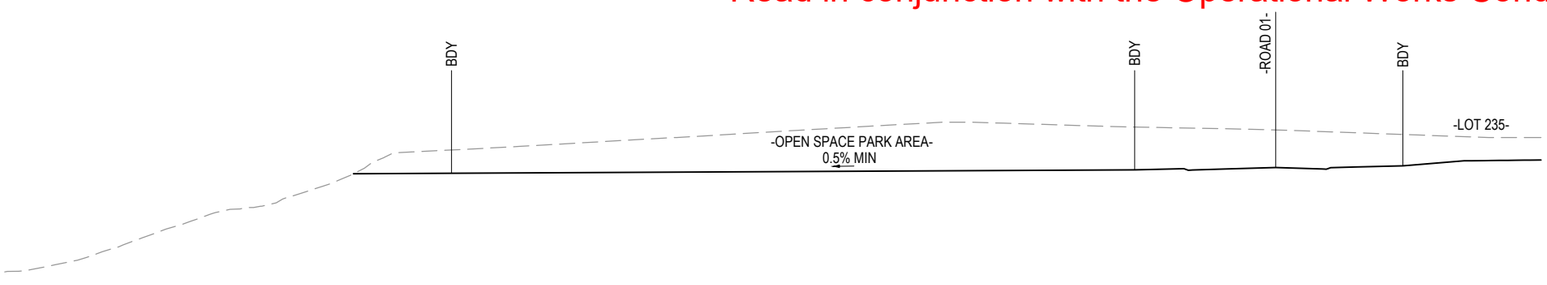
SECTION A
SCALE 1:200 (A1)



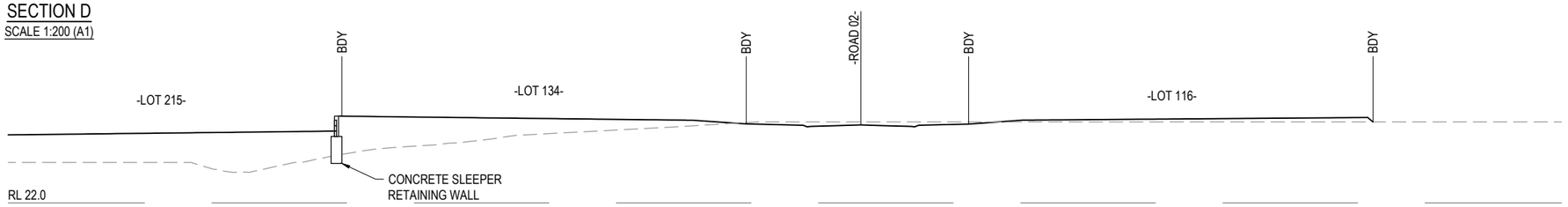
SECTION B
SCALE 1:200 (A1)



SECTION C
SCALE 1:200 (A1)

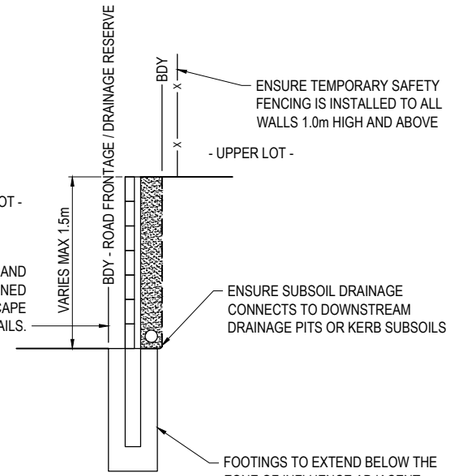


SECTION D
SCALE 1:200 (A1)



SECTION E
SCALE 1:200 (A1)

The measures depicted on this plan are generally considered to be the MINIMUM
to be implemented and maintained on the site during the construction phase.
Read in conjunction with the Operational Works Conditions



SLEEPER RETAINING WALL
TYPICAL DETAIL (SINGLE TIER)
SCALE 1:25 (A1)

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
1	14.10.22	RD	JL	ORIGINAL ISSUE

DRAWN
DESIGN

STATUS: NOT FOR CONSTRUCTION

APPROVED: TROY SCHULTZ RPEQ 20631 DATE 14.10.22

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN (QLD) PTY LTD

Colliers

SCALE
1:200 2 0 2 4 6 8 10 A1
1:400 A3

CLIENT: ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD

ASSOCIATED CONSULTANT: LANDPARTNERS 07 3842 1000

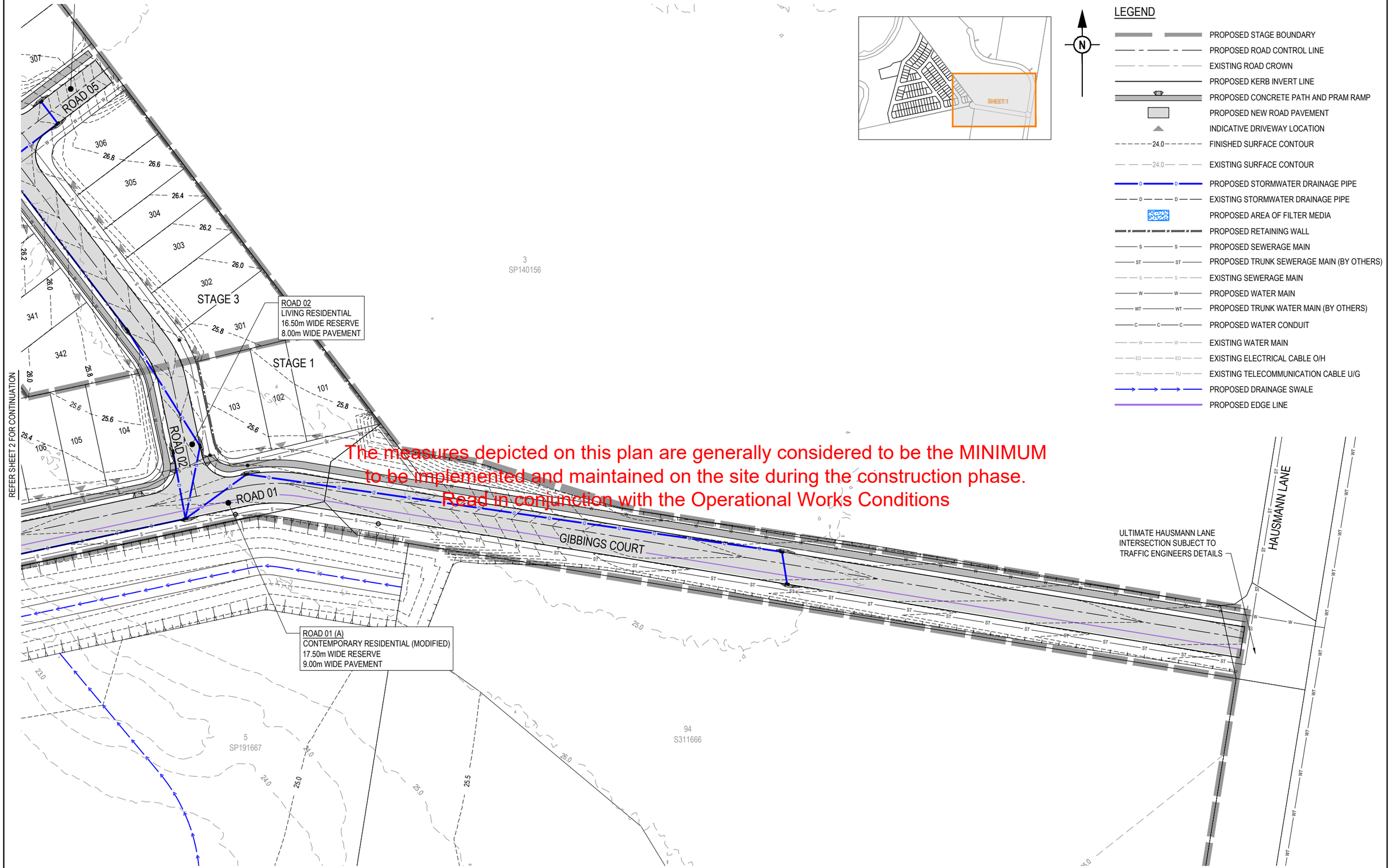
PROJECT NAME: PROPOSED RESIDENTIAL DEVELOPMENT

26 GIBBINGS COURT
UPPER CABOOLTURE

DRAWING TITLE: CONCEPT BULK EARTHWORKS TYPICAL SECTIONS

PROJECT No.	DRAWING No.	REVISION
22-0039	P104	1

CITY OF MORETON BAY
Approved Subject to Conditions of Decision Notice DA/2022/4278
21/12/2023



LEGEND

- PROPOSED STAGE BOUNDARY
- PROPOSED ROAD CONTROL LINE
- EXISTING ROAD CROWN
- PROPOSED KERB INVERT LINE
- PROPOSED CONCRETE PATH AND PRAM RAMP
- PROPOSED NEW ROAD PAVEMENT
- INDICATIVE DRIVEWAY LOCATION
- FINISHED SURFACE CONTOUR
- EXISTING SURFACE CONTOUR
- PROPOSED STORMWATER DRAINAGE PIPE
- EXISTING STORMWATER DRAINAGE PIPE
- PROPOSED AREA OF FILTER MEDIA
- PROPOSED RETAINING WALL
- PROPOSED SEWERAGE MAIN
- PROPOSED TRUNK SEWERAGE MAIN (BY OTHERS)
- EXISTING SEWERAGE MAIN
- PROPOSED WATER MAIN
- PROPOSED TRUNK WATER MAIN (BY OTHERS)
- PROPOSED WATER CONDUIT
- EXISTING WATER MAIN
- EXISTING ELECTRICAL CABLE O/H
- EXISTING TELECOMMUNICATION CABLE U/G
- PROPOSED DRAINAGE SWALE
- PROPOSED EDGE LINE

The measures depicted on this plan are generally considered to be the MINIMUM to be implemented and maintained on the site during the construction phase. Read in conjunction with the Operational Works Conditions

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
1	14.10.22	RD	JL	ORIGINAL ISSUE

DRAWN

DESIGN

STATUS: **NOT FOR CONSTRUCTION**

APPROVED: TROY SCHULTZ RPEQ 20631 DATE: 14.10.22

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE: 1:500 / 1:1000 — 10 5 0 10 20 — A1 / A3

CLIENT: **ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD**

ASSOCIATED CONSULTANT: LANDPARTNERS 07 3842 1000

PROJECT NAME: **PROPOSED RESIDENTIAL DEVELOPMENT**

26 GIBBINGS COURT
UPPER CABOOLTURE

DRAWING TITLE: **CONCEPT ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 1**

PROJECT No.	DRAWING No.	REVISION
22-0039	P105	1

CITY OF MORETON BAY

Approved Subject to Conditions of Decision Notice DA/2022/4278 21/12/2023

REFER SHEET 3 FOR CONTINUATION

N

NOTE: REFER TO SHEET 1 FOR LEGEND

SHEET 2

REFER CONCEPT BASIN LAYOUT PLAN FOR BASIN DETAILS

LOCATION OF PATH ON WESTERN SIDE OF ESPLANADE ROAD IS SUBJECT TO DETAIL LANDSCAPE DESIGN

ROAD 01
CONTEMPORARY RESIDENTIAL (MODIFIED)
17.50m WIDE RESERVE
9.00m WIDE PAVEMENT

ROAD 02
LIVING RESIDENTIAL
16.50m WIDE RESERVE
8.00m WIDE PAVEMENT

ROAD 03
LIVING RESIDENTIAL
16.50m WIDE RESERVE
8.00m WIDE PAVEMENT

ROAD 04

STAGE 1

STAGE 1B

STAGE 2

STAGE 3

BASIN

ROAD 01

ROAD 02

ROAD 03

5
SP191667

REFER SHEET 1 FOR CONTINUATION

The measures depicted on this plan are generally considered to be the MINIMUM to be implemented and maintained on the site during the construction phase. Read in conjunction with the Operational Works Conditions.

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
1	14.10.22	RD	JL	ORIGINAL ISSUE

DRAWN

DESIGN

STATUS: NOT FOR CONSTRUCTION

APPROVED: TROY SCHULTZ RPEQ 20631 DATE: 14.10.22

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN (QLD) PTY LTD

Colliers

SCALE
1:500 10 5 0 10 20 A1
1:1000 A3

CLIENT: ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD

ASSOCIATED CONSULTANT: LANDPARTNERS 07 3842 1000

PROJECT NAME: PROPOSED RESIDENTIAL DEVELOPMENT

26 GIBBINGS COURT
UPPER CABOOLTURE

DRAWING TITLE: CONCEPT ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 2

PROJECT No.	DRAWING No.	REVISION
22-0039	P106	1

CITY OF MORETON BAY

Approved Subject to Conditions of Decision Notice DA/2022/4278 21/12/2023

NOTE: REFER TO SHEET 1 FOR LEGEND

CABOOLTURE RIVER

TEMPORARY TURNAROUND AND EASEMENT

LOCATION OF PATH ON WESTERN SIDE OF ESPLANADE ROAD IS SUBJECT TO DETAIL LANDSCAPE DESIGN

3 SP140156

ROAD 01

DRIVEWAY 01
10.00m WIDE RESERVE
5.00m WIDE PAVEMENT

DRIVEWAY 01

STAGE 3

STAGE 2

ROAD 01 (B)
CONTEMPORARY RESIDENTIAL (MODIFIED)
17.50m WIDE RESERVE
9.00m WIDE PAVEMENT

ROAD 04
LIVING RESIDENTIAL
16.50m WIDE RESERVE
8.00m WIDE PAVEMENT

ROAD 04

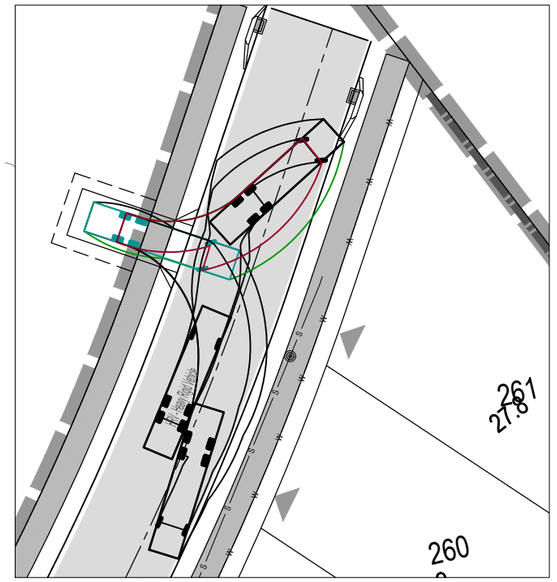
ROAD 02
LIVING RESIDENTIAL
16.50m WIDE RESERVE
8.00m WIDE PAVEMENT

ROAD 02
LIVING RESIDENTIAL
16.50m WIDE RESERVE
8.00m WIDE PAVEMENT

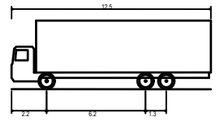
ROAD 02

ROAD 05
LIVING RESIDENTIAL
16.50m WIDE RESERVE
8.00m WIDE PAVEMENT

ROAD 05



TEMPORARY TURNAROUND DETAIL
ADJACENT LOT 261
SCALE 1:250 (A1)



Single Unit Truck/Bus (12.5 m)

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.490m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

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REFER SHEET 2 FOR CONTINUATION

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
1	14.10.22	RD	JL	ORIGINAL ISSUE

DRAWN

DESIGN

STATUS: NOT FOR CONSTRUCTION

APPROVED: TROY SCHULTZ RPEQ 20631 DATE: 14.10.22

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN (QLD) PTY LTD

Colliers

SCALE
1:500 10 5 0 10 20 A1
1:1000 A3

CLIENT: ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD

ASSOCIATED CONSULTANT: LANDPARTNERS 07 3842 1000

PROJECT NAME: PROPOSED RESIDENTIAL DEVELOPMENT

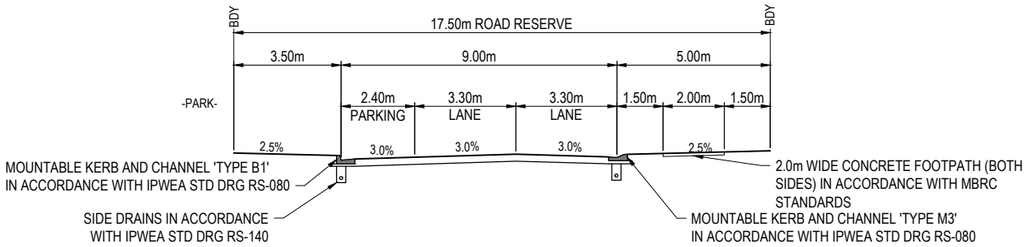
26 GIBBINGS COURT
UPPER CABOOLTURE

DRAWING TITLE: CONCEPT ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 3

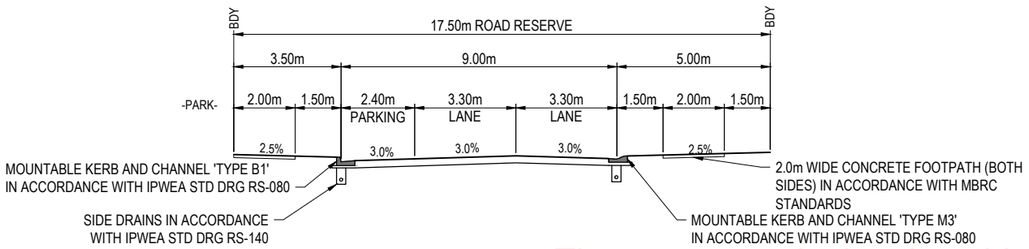
PROJECT No.	DRAWING No.	REVISION
22-0039	P107	1

CITY OF MORETON BAY

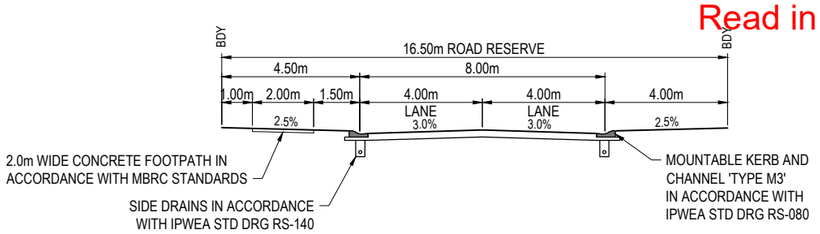
Approved Subject to Conditions of Decision Notice DA/2022/4278 21/12/2023



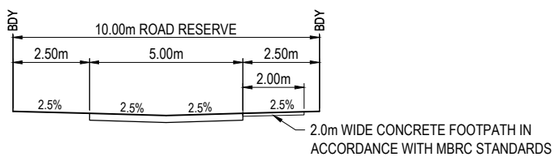
17.50m CONTEMPORARY RESIDENTIAL - TYPICAL SECTION
GIBBINGS COURT AND ROAD 01 (A)



17.50m CONTEMPORARY RESIDENTIAL - TYPICAL SECTION
ROAD 01 (B)

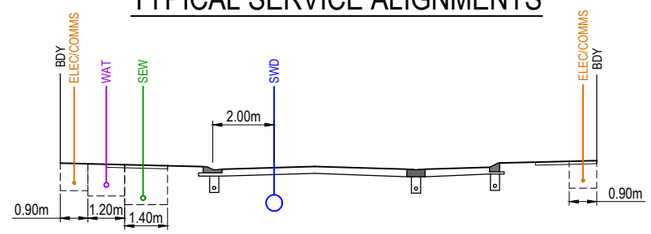


16.50m MODIFIED LIVING RESIDENTIAL - TYPICAL SECTION
(ROADS 2, 3, 4 & 5)

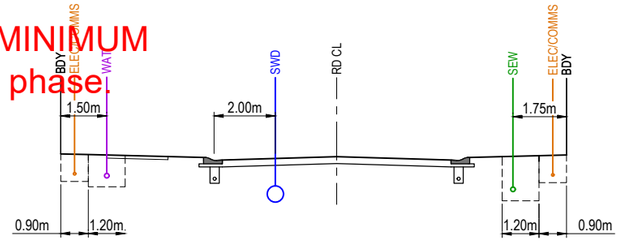


DRIVEWAY 01 - TYPICAL SECTION

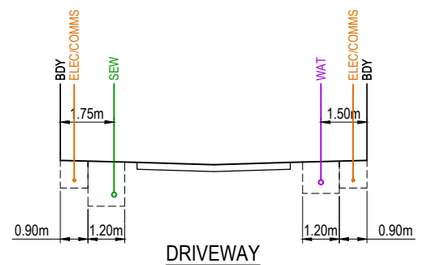
TYPICAL SERVICE ALIGNMENTS



17.50m CONTEMPORARY RESIDENTIAL - TYPICAL SECTION



16.50m MODIFIED LIVING RESIDENTIAL



DRIVEWAY

The measures depicted on this plan are generally considered to be the MINIMUM to be implemented and maintained on the site during the construction phase.
Read in conjunction with the Operational Works Conditions

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
1	14.10.22	RD	JL	ORIGINAL ISSUE

DRAWN
DESIGN

STATUS: NOT FOR CONSTRUCTION
APPROVED: TROY SCHULTZ RPEQ 20631 DATE: 14.10.22
FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:100 1 0 1 2 3 4 5 A1
1:200 A3

CLIENT: ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD

ASSOCIATED CONSULTANT: LANDPARTNERS 07 3842 1000

PROJECT NAME: PROPOSED RESIDENTIAL DEVELOPMENT
26 GIBBINGS COURT
UPPER CABOOLTURE

DRAWING TITLE: CONCEPT TYPICAL ROAD CROSS SECTIONS

PROJECT No.	DRAWING No.	REVISION
22-0039	P108	1

CITY OF MORETON BAY

Approved Subject to Conditions of Decision Notice DA/2022/4278 21/12/2023

LEGEND

- EXISTING SURFACE CONTOUR
- SWALE A CATCHMENT
- PROPOSED SWALE
- FUTURE DRAINAGE CONNECTION (BY OTHERS)
- PROPOSED AREA OF CUT
- PROPOSED AREA OF FILL

LOT 4
SP191667

PROPOSED DEVELOPMENT

ROAD 01 (A)

GIBBINGS COURT

23.3 (INV)

FUTURE DRAINAGE
CONNECTION BY OTHERS
360m AT 0.5%

21.2 (INV) x

FILL EXISTING GULLY
(LEVEL 1 COMPACTION STANDARDS)

STAGE 1A

55.0m MAX

PROPOSED 'SWALE A'

FINISHED SURFACE INVERT GRADED AT 0.5%
LONGIDINAL GRADE DIRECTING RUNOFF TO 'SWALE A'

LOT 5
SP191667

LOT 94
S311666

25.1 (INV) x

HAUSMANN LANE

The measures depicted on this plan are generally considered to be the MINIMUM to be implemented and maintained on the site during the construction phase.

Read in conjunction with the Operational Works Conditions

'SWALE A' CATCHMENT INFORMATION
AREA = 2.40 Ha
FRACTION IMPERVIOUS = 60%
MAX Q100 FLOW = 11.5m³/s

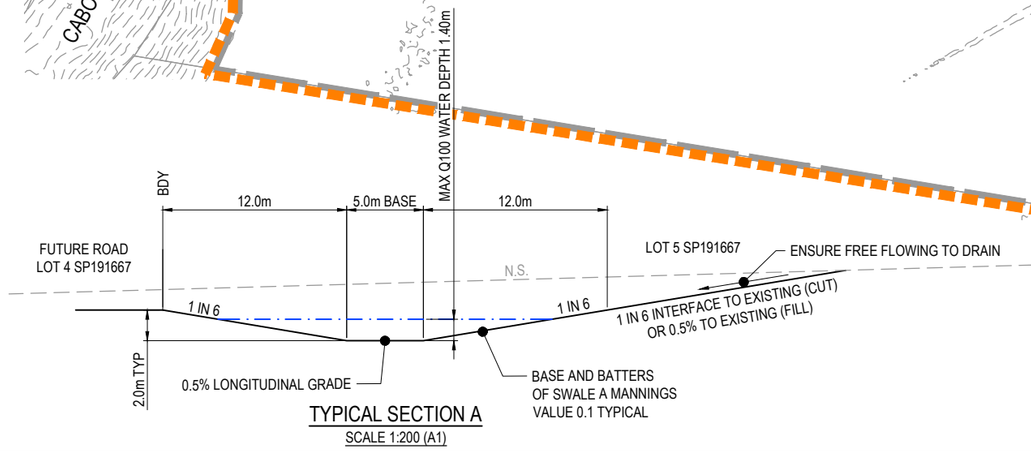
FILLING OF EXISTING GULLY TO RL 26.0
(LEVEL 1 COMPACTION STANDARDS)

DISTURBED AREAS OUTSIDE OF PROPOSED 'SWALE A'
TO BE REINSTATED WITH TOPSOIL AND TURFING

EXISTING DAM TO BE FILLED IN

CABOOLTURE RIVER

LOT 48
S31711



TYPICAL SECTION A
SCALE 1:200 (A1)

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
1	30.08.22	RD	RD	ORIGINAL ISSUE

DRAWN

DESIGN

STATUS: NOT FOR CONSTRUCTION

APPROVED: TROY SCHULTZ RPEQ 20631

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN (QLD) PTY LTD

Colliers

SCALE
1:1000 10 0 10 20 30 40 50 A1
1:2000 A3

CLIENT: ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD

ASSOCIATED CONSULTANT: LANDPARTNERS 07 3842 1000

PROJECT NAME: PROPOSED RESIDENTIAL DEVELOPMENT

26 GIBBINGS COURT
UPPER CABOOLTURE

DRAWING TITLE: DRAINAGE CONCEPT PLAN
LOT 5 SP191667 &
LOT 94 S311666

PROJECT No.	DRAWING No.	REVISION
22-0039	SK01	1

CITY OF MORETON BAY

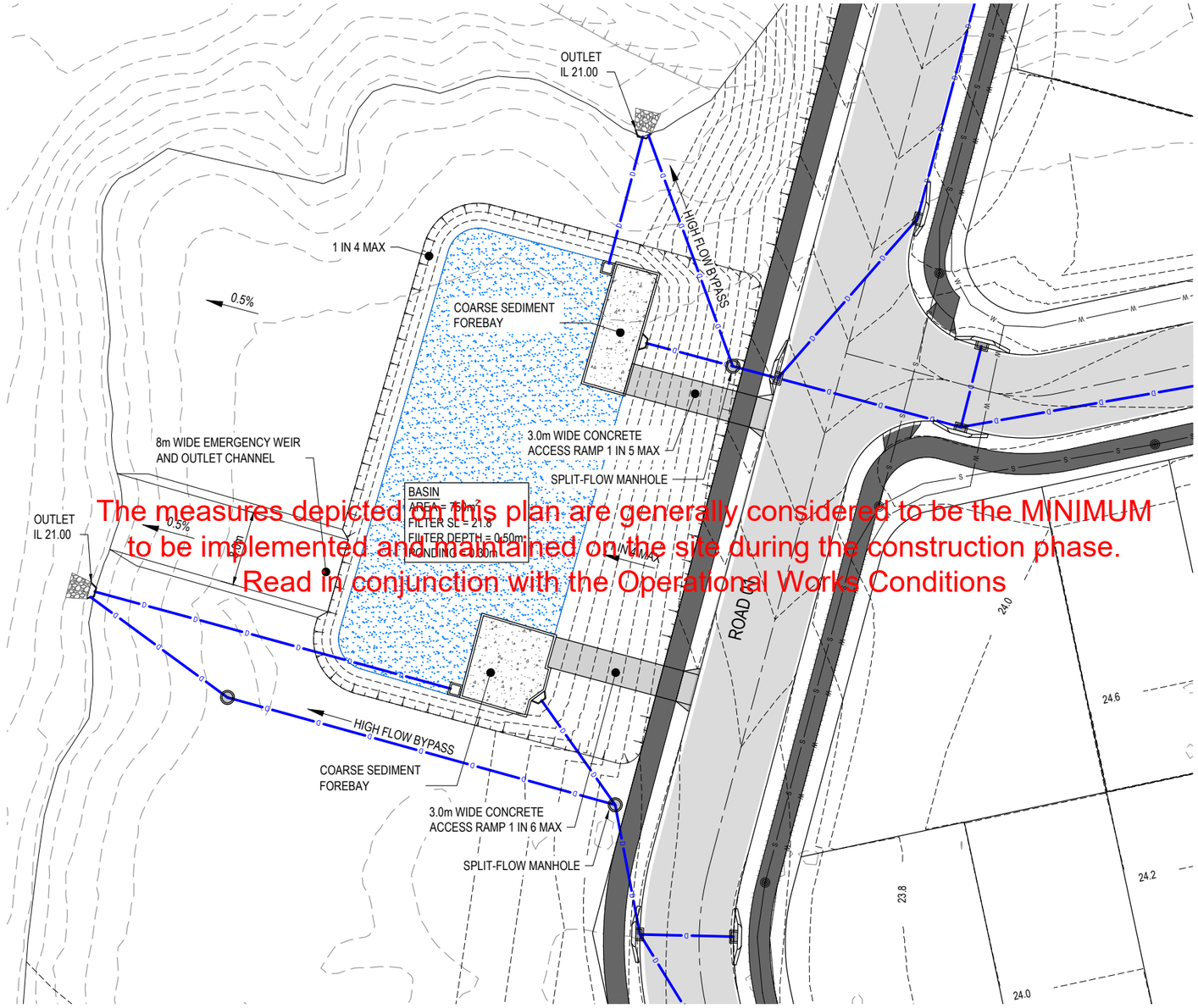
Approved Subject to Conditions of Decision Notice DA/2022/4278 21/12/2023

LEGEND

PROPOSED BATTER LINE

PROPOSED STORMWATER DRAINAGE PIPE

PROPOSED BIO RETENTION FILTER AREA



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Read in conjunction with the Operational Works Conditions

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
1	14.10.22	RD	JL	ORIGINAL ISSUE

DRAWN

DESIGN

STATUS: NOT FOR CONSTRUCTION

APPROVED: TROY SCHULTZ RPEQ 20631 DATE: 14.10.22

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE: 1:250 / 1:500 — 5 0 5 10 — A1 / A3

CLIENT: ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD

ASSOCIATED CONSULTANT: LANDPARTNERS 07 3842 1000

PROJECT NAME: PROPOSED RESIDENTIAL DEVELOPMENT

26 GIBBINGS COURT
UPPER CABOOLTURE

DRAWING TITLE: CONCEPT BIO RETENTION BASIN LAYOUT PLAN

PROJECT No.	DRAWING No.	REVISION
22-0039	P200	1

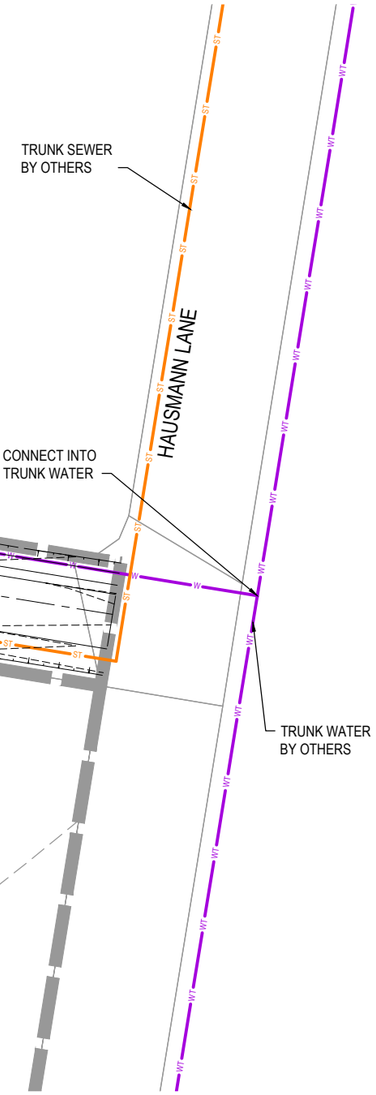
CITY OF MORETON BAY

Approved Subject to Conditions of Decision Notice DA/2022/4278 21/12/2023

N

LEGEND

- PROPOSED AREA OF WORKS
- PROPOSED STAGE BOUNDARY
- TRUNK SEWER MAIN BY OTHERS
- PROPOSED SEWER MAIN
- TRUNK WATER MAIN BY OTHERS
- PROPOSED WATER MAIN
- EXISTING SEWER MAIN
- EXISTING TRUNK SEWER MAIN
- EXISTING WATER MAIN
- PROPOSED RETAINING WALL
- PROPOSED SURFACE CONTOUR
- EXISTING SURFACE CONTOUR
- PROPOSED STORMWATER DRAINAGE
- PROPOSED ROOFWATER DRAINAGE



The measures depicted on this plan are generally considered to be the MINIMUM to be implemented and maintained on the site during the construction phase.
Read in conjunction with the Operational Works Conditions

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
1	14.10.22	RD	JL	ORIGINAL ISSUE

DRAWN

DESIGN

STATUS: NOT FOR CONSTRUCTION

APPROVED: TROY SCHULTZ RPEQ 20631 DATE: 14.10.22

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:500 10 5 0 10 20 A1
1:1000 A3

CLIENT: ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD

ASSOCIATED CONSULTANT: LANDPARTNERS 07 3842 1000

PROJECT NAME: PROPOSED RESIDENTIAL DEVELOPMENT

26 GIBBINGS COURT
UPPER CABOOLTURE

DRAWING TITLE: CONCEPT SEWERAGE AND WATER LAYOUT PLAN SHEET 1

PROJECT No.	DRAWING No.	REVISION
22-0039	P300	1

CITY OF MORETON BAY

Approved Subject to Conditions of Decision Notice DA/2022/4278 21/12/2023

REFER SHEET 3 FOR CONTINUATION

NOTE: REFER TO SHEET 1 FOR LEGEND

SHEET 2

ROAD 01

ROAD 02

ROAD 03

ROAD 04

SEWER CONNECTION POINT

TRUNK SEWER BY OTHERS

TRUNK SEWER BY OTHERS

REFER SHEET 1 FOR CONTINUATION

The measures depicted on this plan are generally considered to be the MINIMUM to be implemented and maintained on the site during the construction phase. Read in conjunction with the Operational Works Conditions

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
1	14.10.22	RD	JL	ORIGINAL ISSUE

DRAWN

DESIGN

STATUS: **NOT FOR CONSTRUCTION**

APPROVED: TROY SCHULTZ RPEQ 20631 DATE: 14.10.22

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE: 1:500 / 1:1000 — 10 5 0 10 20 — A1 / A3

CLIENT: **ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD**

ASSOCIATED CONSULTANT: LANDPARTNERS 07 3842 1000

PROJECT NAME: **PROPOSED RESIDENTIAL DEVELOPMENT**

26 GIBBINGS COURT UPPER CABOOLTURE

DRAWING TITLE: **CONCEPT SEWERAGE AND WATER LAYOUT PLAN SHEET 2**

PROJECT No.	DRAWING No.	REVISION
22-0039	P301	1

CITY OF MORETON BAY

Approved Subject to Conditions of Decision Notice DA/2022/4278 21/12/2023

CABOOLTURE RIVER

FUTURE WATER CONNECTION POINT

3
SP140156

ROAD 01

DRIVEWAY 01

ROAD 02

ROAD 04

ROAD 05

FUTURE WATER CONNECTION POINT

NOTE: REFER TO SHEET 1 FOR LEGEND

REFER SHEET 2 FOR CONTINUATION

The measures depicted on this plan are generally considered to be the MINIMUM to be implemented and maintained on the site during the construction phase. Read in conjunction with the Operational Works Conditions

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
1	14.10.22	RD	JL	ORIGINAL ISSUE

DRAWN

DESIGN

STATUS: **NOT FOR CONSTRUCTION**

APPROVED: TROY SCHULTZ RPEQ 20631 DATE: 14.10.22

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE: 1:500 / 1:1000 — 10 5 0 10 20 — A1 / A3

CLIENT: **ORCHARD (GIBBINGS) DEVELOPMENTS PTY LTD**

ASSOCIATED CONSULTANT: LANDPARTNERS 07 3842 1000

PROJECT NAME: **PROPOSED RESIDENTIAL DEVELOPMENT**

26 GIBBINGS COURT
UPPER CABOOLTURE

DRAWING TITLE: **CONCEPT SEWERAGE AND WATER LAYOUT PLAN SHEET 3**

PROJECT No.	DRAWING No.	REVISION
22-0039	P302	1

CITY OF MORETON BAY

Approved Subject to Conditions of Decision Notice DA/2022/4278 21/12/2023

Appendix B Flood Check Development Report

Approved Subject to Conditions of Decision Notice DA/2022/4278 21/12/2023

Flood Check Development report

Property

Reference: Lot 4 Plan SP191667

26 GIBBINGS COURT
UPPER CABOOLTURE QLD 4510

About this report

This *Flood Check Development Report* provides information from Council's Regional Flood Database that **is relevant for planning new building and/or development works on this property**.

Property specific information provided in this report, relevant to the 2100 planning horizon, includes:

- Flood and/or Coastal Planning areas
- Defined Flood Event
- applicable freeboard information
- Flood Planning Level

In addition, this report also provides information on flow velocity constraints, the year 2100 Highest Astronomical Tide level and overland flow.

This report will help you to understand the flood related requirements of *Moreton Bay Regional Council's Planning Scheme* and the *Queensland Building Regulation*, when considering development opportunities and constraints.

Further information

For further information regarding all building and development requirements for this property, please refer to *Moreton Bay Regional Council's Planning Scheme* available from Council's website: www.moretonbay.qld.gov.au/mbrcplanningscheme

Do you have your Flood Check Property Report?

For further information about the **flood risks that currently apply to this property**, please obtain a *Flood Check Property Report*, freely available from Council's website: www.moretonbay.qld.gov.au/floodcheck

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Flood Check Development report

Planning Scheme Overlays

Reference: Lot 4 Plan SP191667

Flood Hazard	*Flood Planning Area*	*This property lies within Council's Flood Planning Area.*
	Flood *Future 1% AEP (Annual Exceedance Probability) flood event that is predicted to occur in the planning horizon year 2100 when future heavy rainfall conditions cause water levels in a river, creek or urban drainage system to rise and exceed the capacity of the main channel or pipe network.*	**Needs to be considered**
Coastal Hazard	*Coastal Planning Area*	*This property is outside Council's Coastal Planning Area.*
	Storm Tide *Future 1% AEP (Annual Exceedance Probability) storm tide event that is predicted to occur in the planning horizon year 2100 when future extreme weather conditions produce a storm surge raising sea levels above future normal tide levels resulting in inundation of low-lying coastal land.*	Unaffected
	Tidal Inundation *Future tidal inundation that is predicted to occur on low lying coastal land from large high tides in the planning horizon year 2100.*	Unaffected
Overland Flow	*Overland Flow* *Overland flow is excess rainfall runoff that can cause flooding in gullies and depressions located upstream of rivers and creeks and also in areas where the runoff exceeds the capacity of urban drainage systems.*	**Needs to be considered**

About the Planning Scheme Flood Overlays

There are a number of *Moreton Bay Regional Council Planning Scheme* overlays relevant to building and development in areas subject to flooding. In such areas, the *Flood Hazard*, *Coastal Hazard* and *Overland Flow* overlays should be considered when planning new building and developments.

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Flood Check Development report

Technical Summary (page 1 of 6)

Reference: Lot 4 Plan SP191667

Property Levels

Minimum Ground Elevation:	7.6 m AHD	(AHD - Australian Height Datum)
Maximum Ground Elevation:	30.0 m AHD	
Average Ground Elevation:	23.3 m AHD	
Elevation Data Source:	*Aerial Laser Survey - DERM/MBRC (1/04/2014)*	
Floor Level of Lowest Building:	28.2 m AHD +/- 300mm	

Flood and Storm Tide Levels

This property is located in the Caboolture River catchment. The details below have been extracted from the following investigation: *RFD 2014 Model Maintenance Caboolture River (CAB)* by BMT WBM, 1/10/2015.

Flood and storm tide investigation reports are available for free download from Council's website: www.moretonbay.qld.gov.au/flood/publications

The **Defined Flood Event** is the higher of the 1% AEP events for Flood (river, creek and urban drainage flooding) or storm tide for the year 2100 planning horizon, considering:

- the fully developed catchment,
- an allowance for climate change (20% increase in rainfall intensity),
- predicted sea level rise of 0.8 metres, and
- blockages to drainage systems (as specified in the *Queensland Urban Drainage Manual*).

Parts of this property are affected by the year 2100 planning horizon 1% AEP Flood event.

This property is outside the extent of the year 2100 planning horizon 1% AEP Storm Tide event.

Where relevant, further details for the 2100 planning horizon 1% AEP events are provided in the table below.
If applicable to this property, a Future Flood map and Future Storm Tide map are provided on the following pages.

Type of Future Flooding	AEP	Minimum Property Flood Level (m AHD)	Maximum Property Flood Level (m AHD)	Maximum Building Flood Level (m AHD)	Data Reliability
Flood	**1%**	19.2	20.7	-	A
Storm Tide	**1%**	-	-	-	-

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Flood Check Development report

Technical Summary (page 2 of 6)

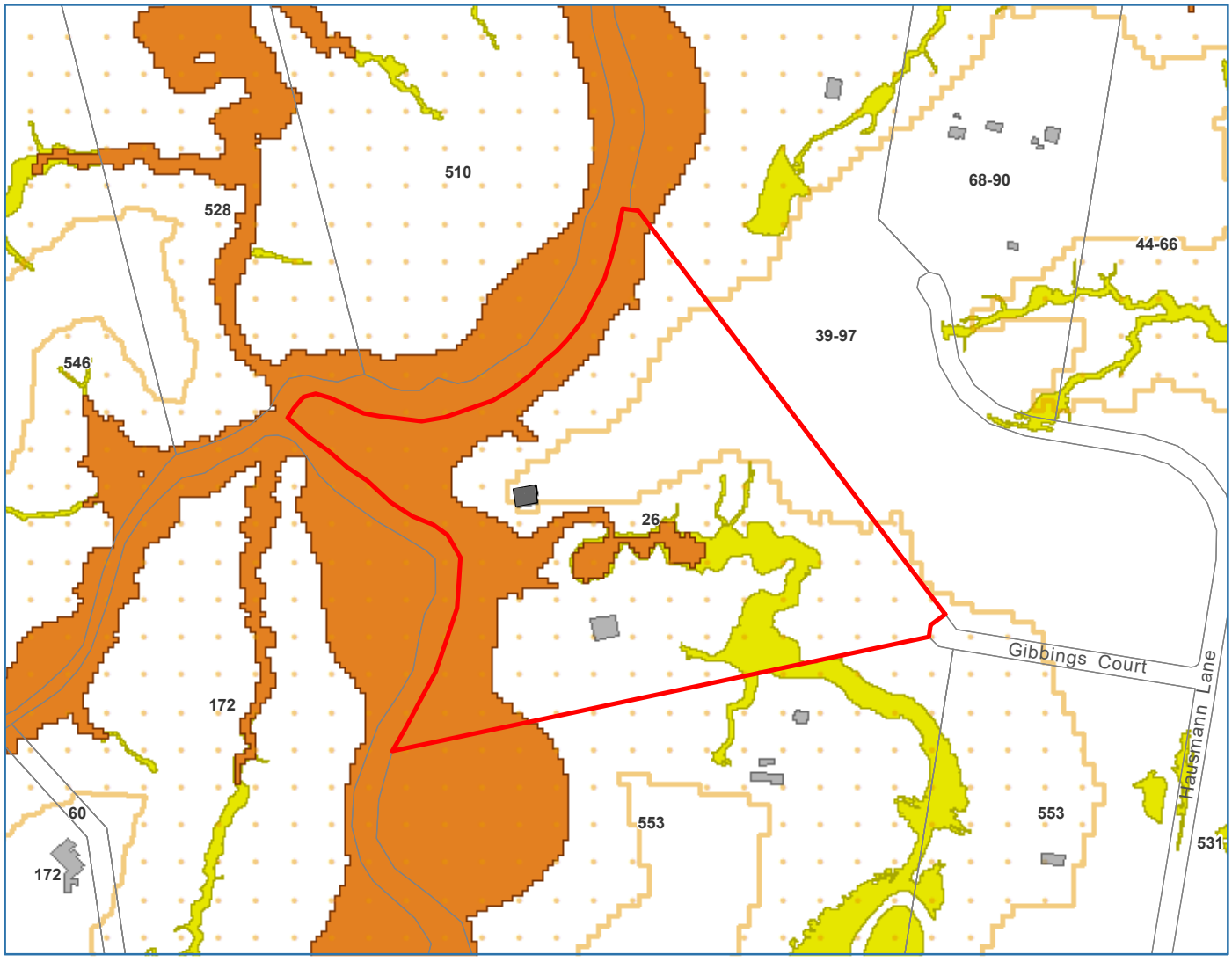
Reference: Lot 4 Plan SP191667

Future Flood Map

This map shows the future 1% AEP Flood extent, Overland Flow and Council's Flood Planning Area where applicable.

To view the Planning Scheme Overlay maps refer to Council's My Property Lookup website:

https://www.moretonbay.qld.gov.au/mplu



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Parcel reference date: 2022-08-16

Subject property
Registered parcels
Flood Planning Area
Future Flood extent - 1% AEP
Overland Flow Overlay
Limited data reliability
Data subject to change
Buildings
Lowest building floor

N W E S

0 4.5 9 13.5 18
Metres

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Technical Summary (page 3 of 6)

Reference: Lot 4 Plan SP191667

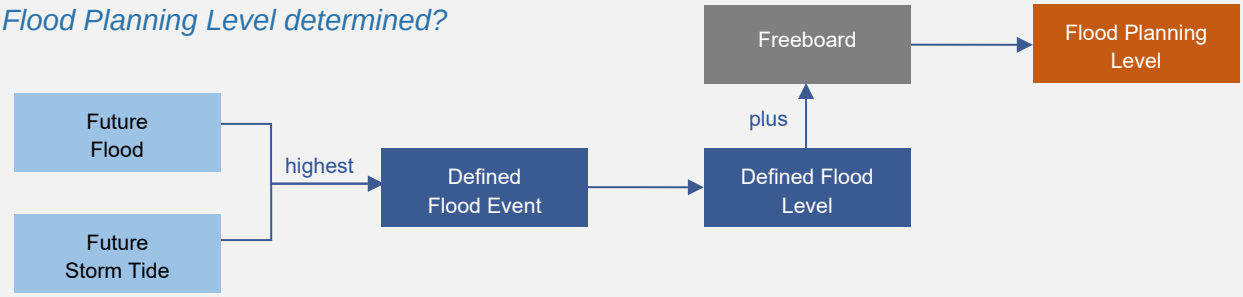
Flood Planning Level

For development within the Flood Planning Area or the Coastal Planning Area, two key considerations are the Defined Flood Level and the Flood Planning Level.

For residential buildings, the finished floor levels of all habitable rooms need to achieve the Flood Planning Level. For new allotments, if filling is permitted on the lot, the Defined Flood Level may apply to the finished ground level.

The Flood Planning Level is set with reference to the Defined Flood Level and includes an applicable freeboard. The Defined Flood Level is derived from the Defined Flood Event, which is the higher of the future 1% AEP events for Flood or storm tide.

How are the Defined Flood Level and Flood Planning Level determined?



For further information on how to apply the Defined Flood Level and Flood Planning Level to your specific circumstances, please refer to *Moreton Bay Regional Council's Planning Scheme.*

This property is subject to Defined Flood Level and Flood Planning Level development conditions.

Where applicable, the Flood Planning Level for this property, based on the Defined Flood Level and relevant freeboard at this location, is provided in the table below.

Defined Flood Level (m AHD)	Freeboard (mm)	Flood Planning Level (m AHD)
20.7 (see note)	750	**21.45** (see note)

Note: This has been identified as a large lot and flood levels may vary significantly across the property. For further advice regarding the Defined Flood Level and Flood Planning Level for the actual location on the property that is being considered for building or development works please contact Council on 3205 0555; or
write to: Floodplain Management Team, Moreton Bay Regional Council, PO Box 159, Caboolture QLD 4510; or
e-mail: flood@moretonbay.qld.gov.au.

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Technical Summary (page 4 of 6)

Reference: Lot 4 Plan SP191667

Flow Velocity Constraints

Within the Moreton Bay Regional Council Planning Scheme, Council designates *Flood Hazard Areas* for the purposes of the *Building Act 1975* section 32 (a) and *Building Regulation 2006* section 13 (1)(a).

Development within these areas needs to consider flow velocity for structural design purposes in cases where the estimated flow velocities exceed 1.5m/s (metres per second).

Parts of this property have been identified to have flow velocities 1.5m/s or greater.

If applicable to this property, these areas are shown on the Velocity Constraint Map provided. The maximum predicted Flood and storm tide velocities for this property are provided below, where applicable.

Type of Flooding	Maximum Flow Velocity (m/s)
Flood	4.87
Storm Tide	-

Tidal Inundation and Sea Level Rise

Some properties located near our coastline are relatively low-lying compared to sea level and may be affected by sea level rise.

The year 2100 Highest Astronomical Tide (HAT) level of 2.3m AHD has been adopted by Council as an interim level for the region. This adopted level includes a projected sea level rise of 0.8m.

This property is above the estimated 2100 Highest Astronomical Tide (HAT) level of 2.3m AHD.

Note: Council's tidal information is currently under review. Refinements will be included in a future update to incorporate spatial variation to tide levels and may change the advice provided.

The advice provided above is sensitive to the accuracy of the ground level information that was used to determine potential inundation from future Highest Astronomical Tides. This is particularly the case for properties with level terrain and vertical walls on their tidal boundary, for example alongside a canal.

If you are concerned about this please consult a qualified and experienced engineer for further advice.

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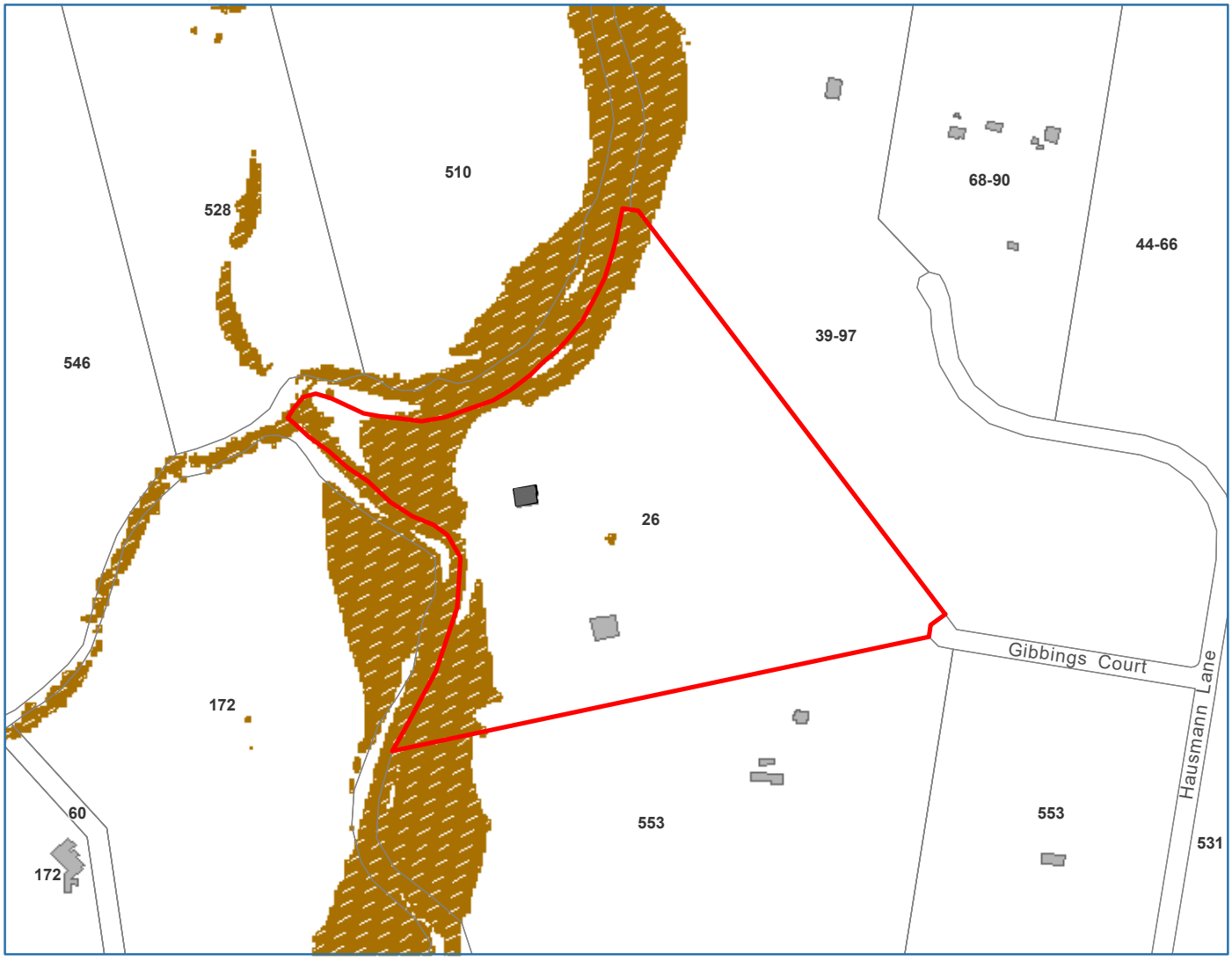
Flood Check Development report

Technical Summary *(page 5 of 6)*

Reference: Lot 4 Plan SP191667

Velocity Constraint Map

This map shows areas identified as having maximum flow velocities of 1.5m/s or greater, where applicable.
To view other flood mapping refer to Council's website: www.moretonbay.qld.gov.au/floodcheck



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Parcel reference date: 2022-08-16

Subject property
Registered parcels

Maximum Velocity - 1.5m/s and greater
Flood
Storm Tide

Limited data reliability
Data subject to change
Buildings
Lowest building floor

N
W
E
S

0 9.5 19 28.5 38
Metres

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Technical Summary (page 6 of 6)

Reference: Lot 4 Plan SP191667

Overland Flow

Council's overland flow mapping represents the inundation of gullies and depressions where stormwater runoff may flow in areas upstream of river, creek and urban flooding map extents.

The current mapping is based on ground level elevations from the 2014 Aerial Laser Survey.

The overland flow mapping report is available for free download from Council's website:
www.moretonbay.qld.gov.au/files/assets/public/services/publications/flood-reports/overland-flow-path-mapping.pdf

Parts of this property are within or adjacent to Council's known Overland Flow mapping extents.

Developers are required to demonstrate how overland flow is to be addressed.

Where relevant, further detail regarding possible overland flow on this property is provided on the Flood Map on page 2.

If you are concerned about overland flow flooding at this property please consult a qualified and experienced engineer for further advice. Please note that Council currently does not provide any advice regarding flood levels or depths for overland flow.

Need more information?

Further information about the *Moreton Bay Regional Council's Planning Scheme* is available from Council's website: www.moretonbay.qld.gov.au/mbrcplanningscheme

If you need more information or assistance with interpreting this report please contact Council on 3205 0555 or enquiries can be submitted by e-mail flood@moretonbay.qld.gov.au or addressed in writing to:

Floodplain Management Team
Moreton Bay Regional Council
PO Box 159
Caboolture QLD 4510

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Appendix C Stormwater Management Plan – Caboolture West NDP1

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REPORT

Stormwater Management Plan – Caboolture West NDP1

PREPARED FOR THE LAND OWNERS GROUP

Calibre Professional Services Pty Ltd
ABN 55 070 683 037

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CITY OF MORETON BAY

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DOCUMENT CONTROL

ISSUE	DATE	ISSUE DETAILS	AUTHOR	CHECKED	APPROVED
A	08.06.21	Initial issue for review	MS, MC, DY		
B	25.10.21	Final issue for review	MS, MB, DY		
C	19.11.21	Final issue for approval	MS, MB, DY		Rob Blake

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CITY OF MORETON BAY

Executive Summary

Calibre Professional Services has been commissioned by the Land Owners Group (LOG) to prepare a Stormwater Management Plan (SWMP) report for Phase 1 of the Neighbourhood Development Plan 1 (NDP1) study area of Caboolture West.

This SWMP investigates and addresses the management of flooding, stormwater quantity and conveyance of runoff from the study area, providing strategies in accordance with relevant Local and State Government standards. The report also identifies trunk infrastructure relating to the proposed strategies which will enable development to discharge lawfully.

The aim of this report is to demonstrate that through the implementation of appropriate management strategies (developed in consultation with Moreton bay Regional Council) and provision of trunk drainage infrastructure, sequenced development of Phase 1 - NDP1 can occur without resulting in adverse or actionable impacts to adjacent or downstream properties.

This report primarily addresses flooding and stormwater management for Phase 1 (which has been referred to as the study area) however the investigation and analysis undertaken in part does address the NDP1 area.

Flood Management

Flood management investigations and analysis have been undertaken by Calibre to determine the impact the development will have on the magnitude and timing of peak flows to the Caboolture River and to the South East Watercourse (as identified in **Figure 2.1**).

Hydrological and hydraulic analysis has confirmed that the timing of post development peak flows from parts of the study area that discharge runoff directly to the Caboolture River will not coincide with the peak flow (and therefore not increase the peak flow) from the larger upstream river catchment. As a result, no change to peak flow or maximum flood conditions along the Caboolture River system is expected to result from changing the land use and hydrology for NDP1 catchments discharging directly to the river. On this basis peak flow mitigation (i.e. detention) is not required for development within NDP1 discharging runoff directly to the Caboolture River. Hydraulic modelling has also confirmed that minor earthworks inside the Medium Risk and High Risk area of the MBRC Flood Hazard Overlay (adjacent to the Caboolture River) will not change the flood conditions adjacent to the study area or downstream.

Hydrological investigations undertaken for the catchment of the South East Watercourse have identified the timing of peak flows from the development is offset to the larger peak from the upstream catchment, with only minor increases in peak flow occurring at the South East Discharge Location. Various options to mitigate the peak flow increases downstream of the study area have been analysed, with the preferred option being to utilise part of the South East Watercourse and proposed District Collector Road crossing to form an an on-line detention storage. Analysis and modelling allowing for future Caboolture River Road works has confirmed that the strategy is effective in mitigating minor increases in flood conditions adjacent to or downstream of the study area.

The results of the flood investigation and analysis support an update to the MBRC Flood Hazard Overlay mapping to account for development of NDP1 Phase 1.

Stormwater Quality Management

In accordance with the MBRC Planning Scheme Policy and the State Planning Policy (SPP, 2017) it is a requirement that new development treat runoff prior to it entering receiving waterways. Development proposed within NDP1 is to provide Stormwater Quality Improvement Devices (SQID's) located, sized and configured to capture and reduce the export of pollutants in runoff to meet the relevant Pollutant Load Reduction (SPP,2017) and Non-Worsening based Water Quality Objectives (WQO's).

Stormwater quality management strategies are to be established by each separate development within NDP1. These strategies are expected to employ SQID's to capture gross pollutants, sediment, suspended solids and nutrients, utilising vegetated natural processes (i.e. bioretention systems) to treat runoff from low density residential areas, while commercial development (that will provide their own stormwater quality treatment systems and maintenance) can employ proprietary treatments systems in addition to vegetated systems.

Preliminary analysis was undertaken to determine the indicative sizing of bioretention filters (for the non-commercial areas of the development). Results of the analysis indicate that bioretention filter areas of a size equivalent to 1% of their contributing catchment area appropriate in meeting the WQO's. More detailed stormwater quality investigations, analysis and design is to be undertaken as part of each separate future Development Application, considering the types of system to be employed and the other elements and constraints associated with these systems.

Waterway Stability Management

In accordance with MBRC Planning Scheme Policy and the State Planning Policy the proposed development within NDP1 will incorporate waterway stability management strategies to mitigate the increase in peak flows for frequent events (i.e. 63% AEP).

Strategies for managing waterway stability for the three northern minor tributaries are expected to involve one or both of the following:

- The retention of the three northern minor tributaries in their current state, with mitigation of upstream development peak flows for the 63% AEP provided by detention storages;

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- The retention of the three northern tributaries in a natural state incorporating minor channel modification works to reduce the risk of erosion and scour resulting from the increase in upstream development 63% AEP peak flows.

For the management of development runoff discharging to the South East Discharge Location:

- The on-line detention and flow conveyance within the South East Watercourse to mitigate 63% AEP peak flows downstream of the eastern NDP1 boundary.
- Discharge of 63% AEP flows (following bioretention treatment) to the low flow channel to be constructed within the South East Watercourse (within NDP1).

Hydrological and hydraulic analysis undertaken confirms the mitigation of development peak flows discharging to the three northern minor tributaries, and mitigation provided by the on-line detention within the South East Watercourse, are effective in mitigating increases in the 63% AEP peak flows and managing waterway stability.

Trunk Drainage Infrastructure

Due to the degree of property ownership fragmentation there is a need to have drainage infrastructure that services more than one development entity.

Trunk infrastructure has been identified for parts of the study area where development runoff will be conveyed (and managed) by more than one downstream development / property. The order that the trunk drainage works is provided will influence the order of development within those part of the study area. An ordered staging of the trunk drainage has been provided to outline how development can progress without the need for or interim measures or discharge approval from downstream property owners to meet lawful discharge requirements.

In the event that the sequence of development does not following the recommended staging of works, then interim measures can be employed to achieve lawful discharge.

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Appendix D Rational Method – Swale Design

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RATIONAL METHOD SUMMARY & RAINFALL DATA

Project 26 Gibbings Court - Swale Design
Project # 22-0039

Rainfall IFD Input Data (Australian Rainfall and Runoff)

$^{2}I_{1}$	$^{2}I_{12}$	$^{2}I_{72}$	$^{50}I_{1}$	$^{50}I_{12}$	$^{50}I_{72}$	F2	F50	G
48.32	9.73	3	89.56	19.72	6.81	4.39	17.33	0.16

Rainfall Intensity (mm/hr)

DURATION		AVERAGE RECURRENCE INTERVAL (years)						
(hours)	(minutes)	1 yr	2 yr	5 yr	10 yr	20 yr	50 yr	100 yr
0.083	5	119	152	189	211	241	281	312
0.1	6	112	143	178	198	227	265	294
0.167	10	92	117	146	164	187	219	243
0.25	15	77	98	123	138	158	184	205
0.333	20	67	86	108	121	138	162	180
0.417	25	60	77	96	108	124	146	162
0.5	30	54	70	88	99	113	133	148
0.75	45	43.8	56	71	80	92	108	120
1	60	37.3	47.9	61	68	79	92	103
1.5	90	28.8	37.1	47.2	53	62	73	81
2	120	23.9	30.8	39.4	44.7	52	61	68
3	180	18.3	23.7	30.5	34.7	40.2	47.7	54
4.5	270	14.0	18.2	23.6	26.9	31.2	37.2	41.8
6	360	11.6	15.1	19.6	22.4	26.1	31.1	35.1
9	540	8.91	11.6	15.2	17.4	20.3	24.3	27.5
12	720	7.39	9.63	12.7	14.5	17.0	20.4	23.1
18	1080	5.72	7.49	9.94	11.5	13.5	16.3	18.5
24	1440	4.77	6.26	8.37	9.71	11.5	13.9	15.8
30	1800	4.13	5.43	7.30	8.49	10.1	12.2	13.9
36	2160	3.66	4.82	6.51	7.60	9.01	11.0	12.5
48	2880	3.01	3.97	5.41	6.34	7.54	9.22	10.6
72	4320	2.23	2.96	4.08	4.81	5.76	7.08	8.14

Catchment Data

Details: Existing

Variable	Value	Units
Area:	24.00	ha
C_{10}	0.80	fraction

Rational Method Summary

Adopted Time of Concentration (tc) 20 Minutes (or 0.33 hours) **Bransby-Williams**

Variable	AVERAGE RECURRENCE INTERVAL (years)						
	1 yr	2 yr	5 yr	10 yr	20 yr	50 yr	100 yr
Freq Factor	0.80	0.85	0.95	1.00	1.05	1.15	1.20
Intensity (mm/hr)	67	86	108	121	138	162	180
Discharge (m^3/s)	2.86	3.89	5.45	6.43	7.75	9.93	11.54

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Appendix E Existing Case (E01) Flood Maps

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LEGEND

Site

DCDB

E01_100yr_d_Max

- 0
- 0.3
- 0.6
- 0.9
- 1.2
- 1.5
- 1.8
- 2.1
- 2.4
- 2.7
- 3.0

DATE:	14/10/2022
CREATED BY:	D. ESPOSITO
REVISION:	A
STATUS:	FINAL

0 100 200 300 400 m

PAGE SIZE: A3 SCALE: 1:7,000

COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

N

CONSULTANT: Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 1% AEP - FLOOD DEPTH + FLOOD LEVEL MAP- BASE CASE (D01)

FIGURE NO: 1E

CLIENT: Orchard (Gibbings) Developments Pty Ltd

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21/12/2023

LEGEND

Site

DCDB

E01_020yr_d_Max

- 0
- 0.3
- 0.6
- 0.9
- 1.2
- 1.5
- 1.8
- 2.1
- 2.4
- 2.7
- 3.0

DATE:	14/10/2022
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REVISION:	A
STATUS:	FINAL

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COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

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CONSULTANT: Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 5% AEP - FLOOD DEPTH + FLOOD LEVEL MAP- BASE CASE (E01)

FIGURE NO: 2E

CLIENT: Orchard (Gibbings) Developments Pty Ltd

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21/12/2023

LEGEND

Site

DCDB

E01_010yr_d_Max

- 0
- 0.3
- 0.6
- 0.9
- 1.2
- 1.5
- 1.8
- 2.1
- 2.4
- 2.7
- 3.0

DATE:	14/10/2022
CREATED BY:	D. ESPOSITO
REVISION:	A
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COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

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CONSULTANT: Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 10% AEP - FLOW DEPTH + FLOOD LEVEL MAP- BASE CASE (E01)

FIGURE NO: 3E

CLIENT: Orchard (Gibbings) Developments Pty Ltd

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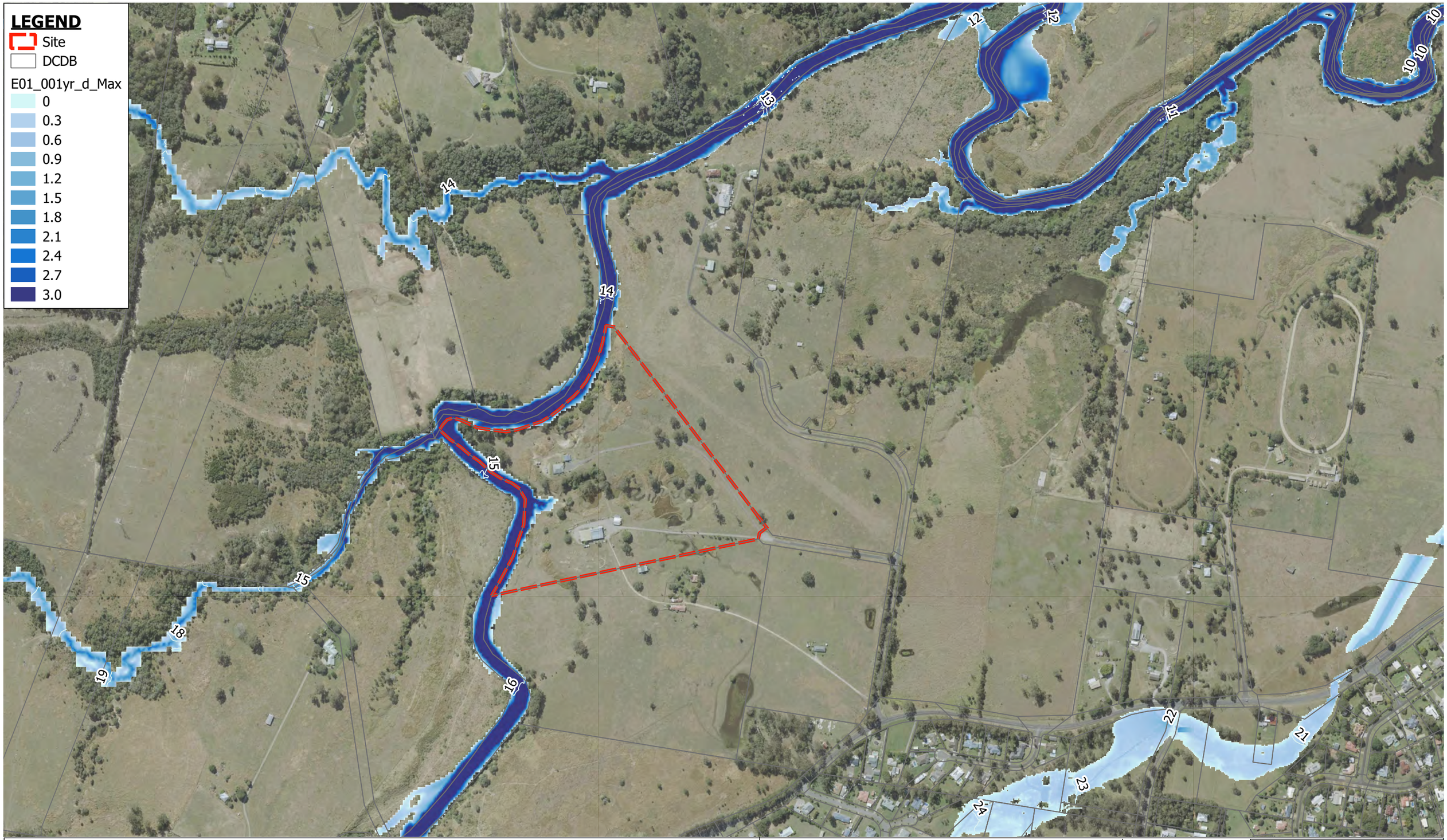

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STATUS:	FINAL		
PROJECT TITLE:	26 GIBBINGS COURT, UPPER CABOOLTURE	PROJECT NO: 22-0039	CLIENT: Orchard (Gibbings) Developments Pty Ltd
FIGURE TITLE:	63.2% AEP - FLOW DEPTH + FLOOD LEVEL MAP- BASE CASE (E01)	FIGURE NO: 4E	

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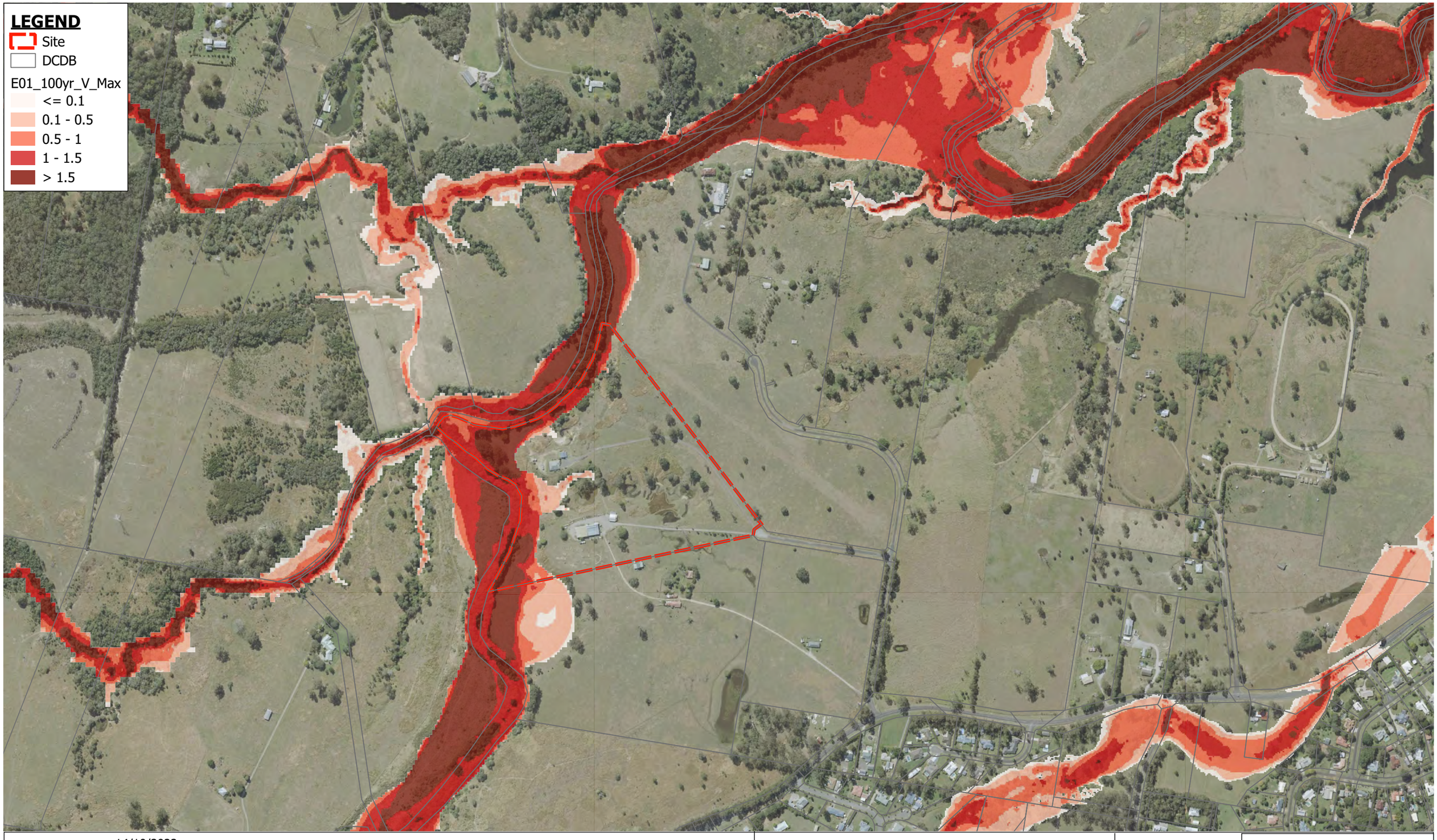
21/12/2023



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CONSULTANT:
Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE
PROJECT NO: 22-0039

FIGURE TITLE: 1% AEP - FLOW VELOCITY MAP - BASE CASE (E01)
FIGURE NO: 5E

CLIENT:
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21/12/2023

LEGEND

- Site
- DCDB

E01_020yr_V_Max

- <= 0.1
- 0.1 - 0.5
- 0.5 - 1
- 1 - 1.5
- > 1.5

DATE:	14/10/2022
CREATED BY:	D. ESPOSITO
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COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

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CONSULTANT: Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 5% AEP - FLOW VELOCITY MAP - BASE CASE (E01)

FIGURE NO: 6E

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CONSULTANT: Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE
PROJECT NO: 22-0039

FIGURE TITLE: 10% AEP - FLOW VELOCITY MAP - BASE CASE (E01)
FIGURE NO: 7E

CLIENT: Orchard (Gibbings) Developments Pty Ltd

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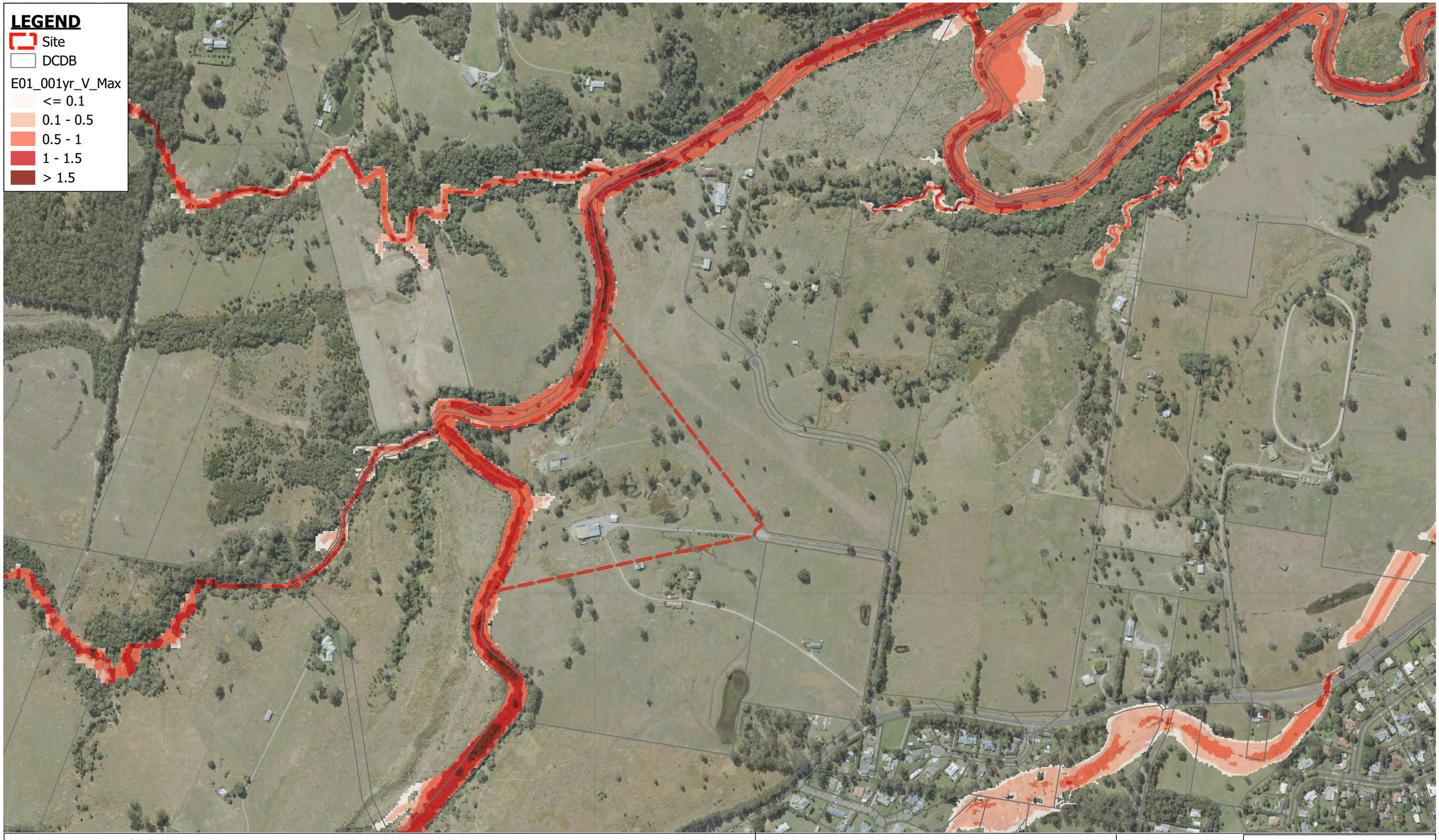
21/12/2023



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CONSULTANT:
Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE
PROJECT NO: 22-0039

FIGURE TITLE: 63.2% AEP - FLOW VELOCITY MAP - BASE CASE (E01)
FIGURE NO: 8E

CLIENT:
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21/12/2023

LEGEND

Site

DCDB

E01_100yr_ZMBRC_Max

H1

H2

H3

H4

H5

DATE: 14/10/2022

CREATED BY: D. ESPOSITO

REVISION: A

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CONSULTANT:

Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

CLIENT:

Orchard (Gibbings) Developments Pty Ltd

FIGURE TITLE: 1% AEP - FLOOD HAZARD MAP - BASE CASE (E01)

FIGURE NO: 9E

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21/12/2023

LEGEND

- Site
- DCDB

E01_020yr_ZMBRC_Max

- H1
- H2
- H3
- H4
- H5

DATE: 14/10/2022
CREATED BY: D. ESPOSITO
REVISION: A
STATUS: FINAL

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COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

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CONSULTANT:

Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE
PROJECT NO: 22-0039

FIGURE TITLE: 5% AEP - FLOOD HAZARD MAP - BASE CASE (E01)
FIGURE NO: 10E

CLIENT:

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21/12/2023

LEGEND

- Site
- DCDB

E01_010yr_ZMBRC_Max

- H1
- H2
- H3
- H4
- H5

DATE:	14/10/2022
CREATED BY:	D. ESPOSITO
REVISION:	A
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COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

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CONSULTANT: Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 10% AEP - FLOOD HAZARD MAP - BASE CASE (E01)

FIGURE NO: 11E

CLIENT: Orchard (Gibbings) Developments Pty Ltd

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21/12/2023

LEGEND

- Site
- DCDB

E01_001yr_ZMBRC_Max

- H1
- H2
- H3
- H4
- H5

DATE:	14/10/2022
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COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

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CONSULTANT: Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 63.2% AEP - FLOOD HAZARD MAP - BASE CASE (E01)

FIGURE NO: 12E

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Appendix F Developed Case (D01) Flood Maps

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LEGEND

Site

Concept Layout

Road

Lot

DCDB

D02_100yr_d_Max

0

0.3

0.6

0.9

1.2

1.5

1.8

2.1

2.4

2.7

3.0

DATE:	14/10/2022
CREATED BY:	D. ESPOSITO
REVISION:	A
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COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

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CONSULTANT:

Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 1% AEP - FLOOD DEPTH + FLOOD LEVEL MAP- DEVELOPED CASE (D01)

FIGURE NO: 1F

CLIENT:

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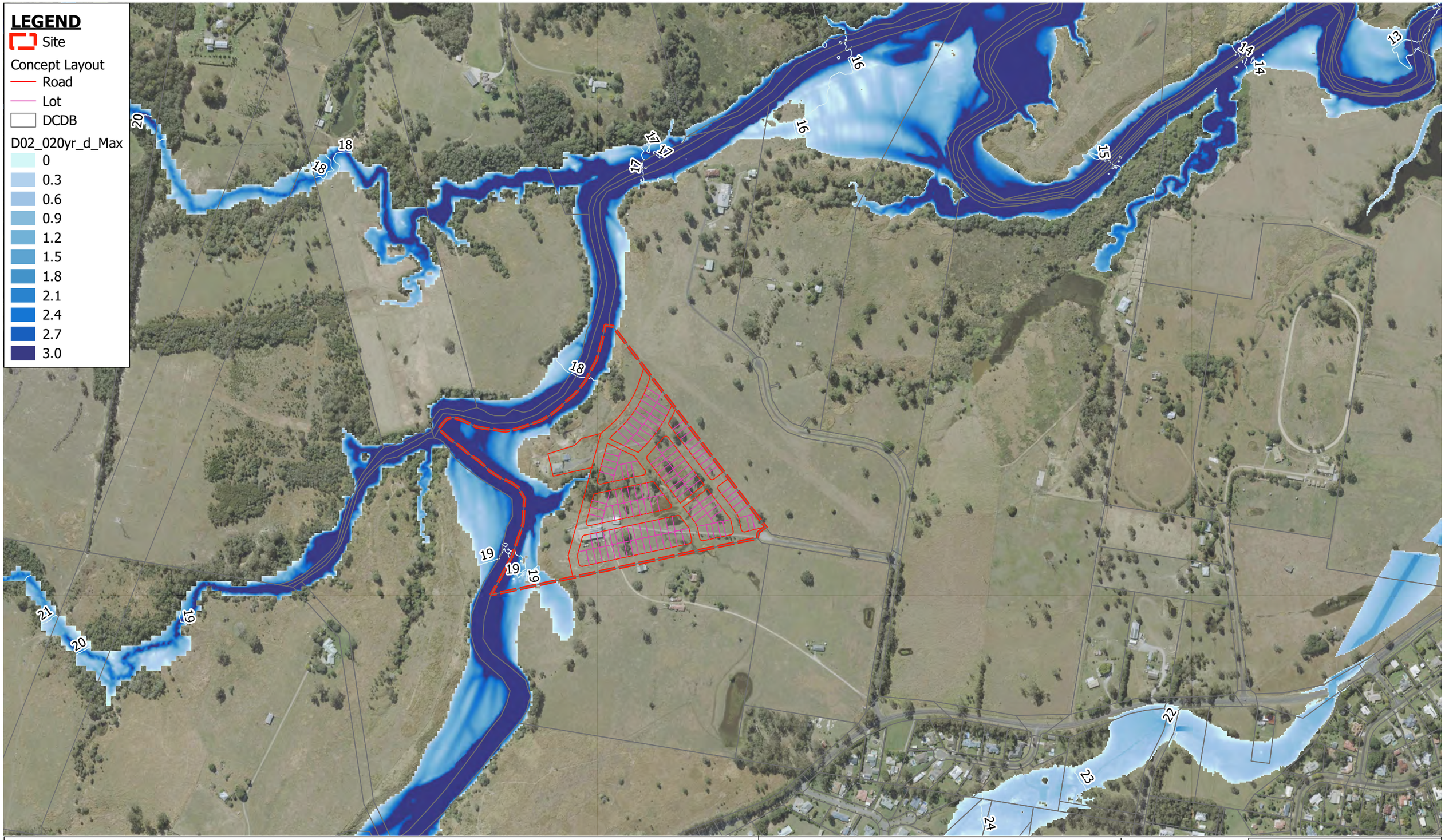

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FIGURE TITLE:	5% AEP - FLOW DEPTH + FLOOD LEVEL MAP- DEVELOPED CASE (D01)	FIGURE NO: 2F	

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21/12/2023

LEGEND

Site

Concept Layout

Road

Lot

DCDB

D02_010yr_d_Max

0

0.3

0.6

0.9

1.2

1.5

1.8

2.1

2.4

2.7

3.0

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CONSULTANT: Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 10% AEP - FLOW DEPTH + FLOOD LEVEL MAP- DEVELOPED CASE (D01)

FIGURE NO: 3F

CLIENT: Orchard (Gibbings) Developments Pty Ltd

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21/12/2023

LEGEND

Site

Concept Layout

Road

Lot

DCDB

D02_001yr_d_Max

0

0.3

0.6

0.9

1.2

1.5

1.8

2.1

2.4

2.7

3.0

DATE:	14/10/2022
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COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

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CONSULTANT:

Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 63.2% AEP - FLOW DEPTH + FLOOD LEVEL MAP- DEVELOPED CASE (D01)

FIGURE NO: 4F

CLIENT:

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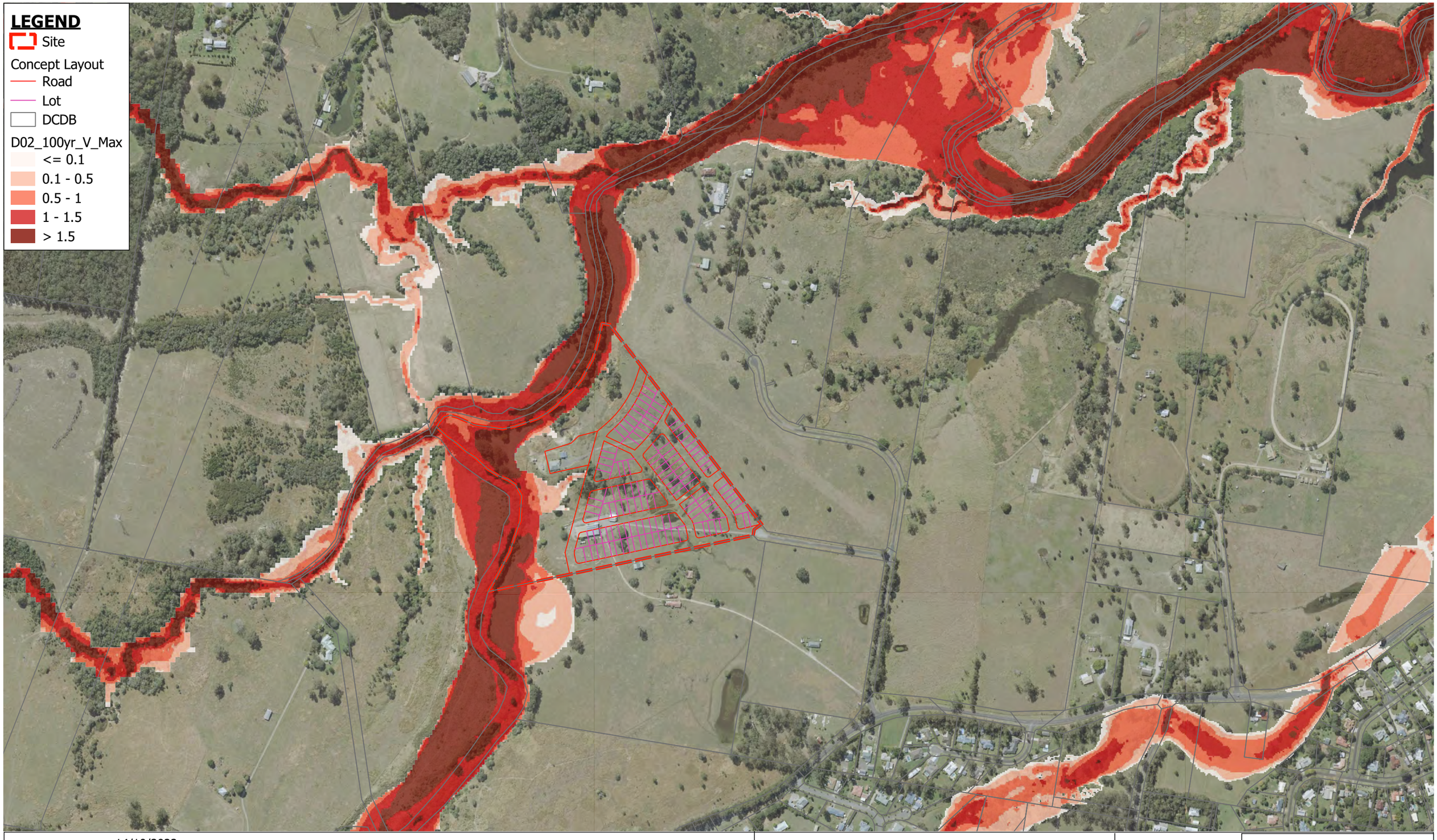

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CONSULTANT: Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 1% AEP - FLOW VELOCITY MAP - DEVELOPED CASE (D01)

FIGURE NO: 5F

CLIENT: Orchard (Gibbings) Developments Pty Ltd

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21/12/2023

LEGEND

Site

Concept Layout

Road

Lot

DCDB

D02_020yr_V_Max

<= 0.1

0.1 - 0.5

0.5 - 1

1 - 1.5

> 1.5

DATE:	14/10/2022
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CONSULTANT:

Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 5% AEP - FLOW VELOCITY MAP - DEVELOPED CASE (D01)

FIGURE NO: 6F

CLIENT:

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LEGEND

Site

Concept Layout

Road

Lot

DCDB

D02_010yr_V_Max

<= 0.1

0.1 - 0.5

0.5 - 1

1 - 1.5

> 1.5

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CONSULTANT: Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 10% AEP - FLOW VELOCITY MAP - DEVELOPED CASE (D01)

FIGURE NO: 7F

CLIENT: Orchard (Gibbings) Developments Pty Ltd

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21/12/2023

LEGEND

Site

Concept Layout

Road

Lot

DCDB

D02_001yr_V_Max

<= 0.1

0.1 - 0.5

0.5 - 1

1 - 1.5

> 1.5

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CONSULTANT:

Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 63.2% AEP - FLOW VELOCITY MAP - DEVELOPED CASE (D01)

FIGURE NO: 8F

CLIENT:

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21/12/2023

LEGEND

Site

Concept Layout

Road

Lot

DCDB

D02_100yr_ZMBRC_Max

H1

H2

H3

H4

H5

DATE: 14/10/2022

CREATED BY: D. ESPOSITO

REVISION: A

STATUS: FINAL

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PAGE SIZE: A3 SCALE: 1:7,000

COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

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CONSULTANT:

Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 1% AEP - FLOOD HAZARD MAP - DEVELOPED CASE (D01)

FIGURE NO: 9F

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LEGEND

Site

Concept Layout

Road

Lot

DCDB

D02_020yr_ZMBRC_Max

H1

H2

H3

H4

H5

DATE: 14/10/2022

CREATED BY: D. ESPOSITO

REVISION: A

STATUS: FINAL

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CONSULTANT: Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 5% AEP - FLOOD HAZARD MAP - DEVELOPED CASE (D01)

FIGURE NO: 10F

CLIENT: Orchard (Gibbings) Developments Pty Ltd

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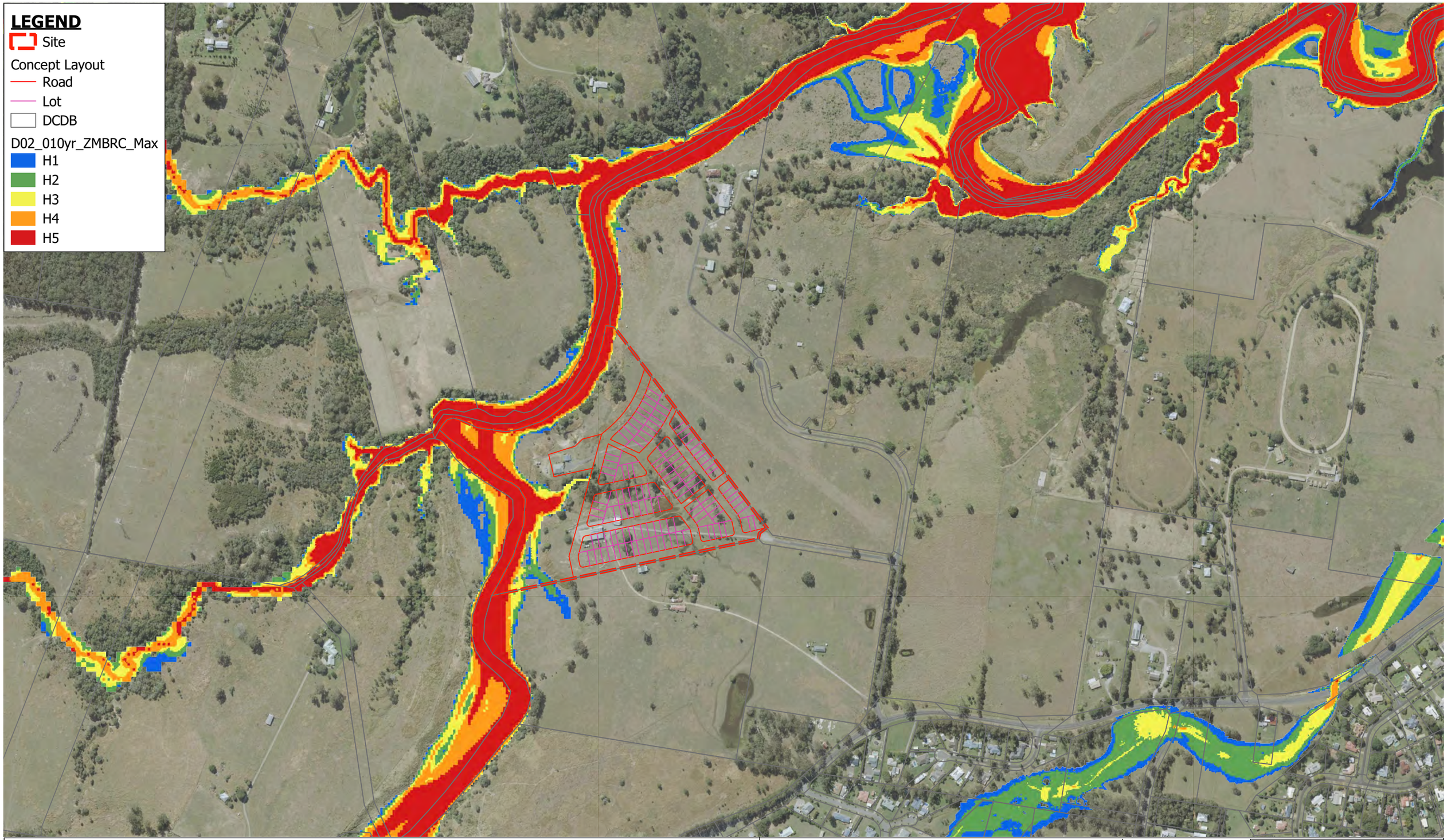

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CONSULTANT:
Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE
PROJECT NO: 22-0039

FIGURE TITLE: 10% AEP - FLOOD HAZARD MAP - DEVELOPED CASE (D01)
FIGURE NO: 11F

CLIENT:
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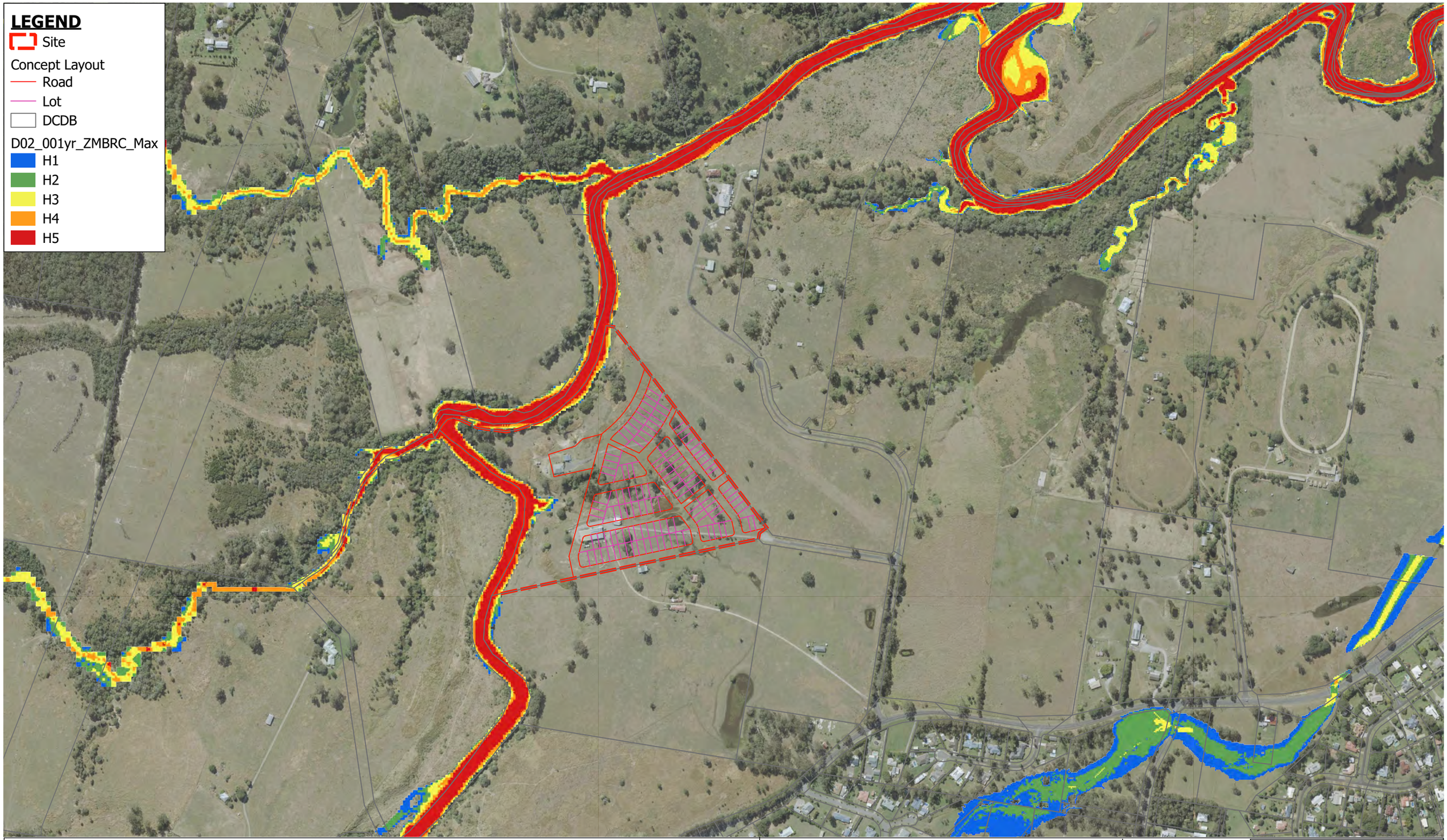
21/12/2023



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CONSULTANT:
Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE
PROJECT NO: 22-0039

FIGURE TITLE: 63.2% AEP - FLOOD HAZARD MAP - DEVELOPED CASE (D01)
FIGURE NO: 12F

CLIENT:
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21/12/2023

Appendix G Flood Afflux Maps

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DATE: 14/10/2022
CREATED BY: D. ESPOSITO
REVISION: A
STATUS: FINAL

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1:4,000
PAGE SIZE: A3 SCALE:
COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

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CONSULTANT:
Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE
PROJECT NO: 22-0276

FIGURE TITLE: 1.0 % AEP WATER SURFACE LEVEL IMPACTS (DEVELOPED [D01] - BASE CASE [E01])
FIGURE NO: 1G

CLIENT:
Orchard (Gibbings) Developments Pty Ltd

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CITY OF MORETON BAY
Approved Subject to Conditions of Decision Notice DA/2022/4278
21/12/2023

DATE:	14/10/2022	0 60 120 180 240 m	CONSULTANT: Colliers PEAKURBAN
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PROJECT TITLE:	26 GIBBINGS COURT, UPPER CABOOLTURE	PROJECT NO: 22-0276	CLIENT: Orchard (Gibbings) Developments Pty Ltd
FIGURE TITLE:	5.0 % AEP WATER SURFACE LEVEL IMPACTS (DEVELOPED [D01] - BASE CASE [E01])	FIGURE NO: 2G	

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21/12/2023

DATE:	14/10/2022	0 60 120 180 240 m	CONSULTANT: Colliers PEAKURBAN
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REVISION:	A	PAGE SIZE: A3 SCALE: 1:4,000	
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PROJECT TITLE:	26 GIBBINGS COURT, UPPER CABOOLTURE	PROJECT NO: 22-0276	CLIENT: Orchard (Gibbings) Developments Pty Ltd
FIGURE TITLE:	10.0 % AEP WATER SURFACE LEVEL IMPACTS (DEVELOPED [D01] - BASE CASE [E01])	FIGURE NO: 3G	

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Approved Subject to Conditions of Decision Notice DA/2022/4278
21/12/2023

LEGEND

Water Surface Level Impacts

- Reduction > 500mm
- Reduction 200 - 500mm
- Reduction 100 - 200mm
- Reduction 50 - 100mm
- Reduction 20 - 50mm
- Reduction 20mm - Increase 20mm
- Increase 20 - 50mm
- Increase 50 - 100mm
- Increase 100 - 200mm
- Increase 200 - 500mm
- Increase >500mm
- Was wet now dry
- Was dry now wet

Concept Layout

- Lots
- Roads
- Site
- DCDB

DATE: 14/10/2022
CREATED BY: D. ESPOSITO
REVISION: A
STATUS: FINAL

0 60 120 180 240 m
1:4,000
PAGE SIZE: A3 SCALE:
COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

N

CONSULTANT:
Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE
PROJECT NO: 22-0276

FIGURE TITLE: 63.2 % AEP WATER SURFACE LEVEL IMPACTS (DEVELOPED [D01] - BASE CASE [E01])
FIGURE NO: 4G

CLIENT:
Orchard (Gibbings) Developments Pty Ltd

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Appendix H Change in Velocity Maps

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LEGEND

Change In Velocity (m/s)

- <-3
- -3.0 to -2.0
- -2.0 to -1.0
- -1.0 to -0.5
- -0.5 to -0.2
- -0.2 to 0.2
- 0.2 to 0.5
- 0.5 to 1.0
- 1.5 to 2.0
- 2.0 to 3.0
- >3
- Was wet now dry
- Was dry now wet

Concept Layout

- Roads
- Lots
- Property_boundaries___DCDB_Lite
- Site

DATE:	14/10/2022
CREATED BY:	D. ESPOSITO
REVISION:	A
STATUS:	FINAL

0 100 200 300 400 m

PAGE SIZE: A3 SCALE: 1:6,871.541593

COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

N

CONSULTANT: Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 1.0 % AEP CHANGE IN VELOCITY(DEVELOPED [D01] - BASE CASE [E01])

FIGURE NO: 1H

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DATE: 14/10/2022
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PAGE SIZE: A3 SCALE: 1:6,871.541593
COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

N

CONSULTANT:
Colliers PEAKURBAN

PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE
PROJECT NO: 22-0039

FIGURE TITLE: 5.0 % AEP CHANGE IN VELOCITY(DEVELOPED [D01] - BASE CASE [E01])
FIGURE NO: 2H

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LEGEND

Change In Velocity (m/s)

- <-3
- -3.0 to -2.0
- -2.0 to -1.0
- -1.0 to -0.5
- -0.5 to -0.2
- -0.2 to 0.2
- 0.2 to 0.5
- 0.5 to 1.0
- 1.5 to 2.0
- 2.0 to 3.0
- >3
- Was wet now dry
- Was dry now wet

Concept Layout

- Roads
- Lots
- Property_boundaries___DCDB_Lite
- Site

DATE:	14/10/2022
CREATED BY:	D. ESPOSITO
REVISION:	A
STATUS:	FINAL

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PAGE SIZE: A3 SCALE: 1:6,871.541593

COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

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PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE

PROJECT NO: 22-0039

FIGURE TITLE: 10.0 % AEP CHANGE IN VELOCITY(DEVELOPED [D01] - BASE CASE [E01])

FIGURE NO: 3H

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DATE: 14/10/2022
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REVISION: A
STATUS: FINAL

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PAGE SIZE: A3 SCALE: 1:6,871.541593
COORDINATE SYSTEM: GDA 94 / MGA ZONE 56

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PROJECT TITLE: 26 GIBBINGS COURT, UPPER CABOOLTURE
PROJECT NO: 22-0039

FIGURE TITLE: 63.2 % AEP CHANGE IN VELOCITY(DEVELOPED [D01] - BASE CASE [E01])
FIGURE NO: 4H

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BUSHFIRE MANAGEMENT PLAN

Lot 4 on SP191667

26 Gibbings Court, Upper Caboolture

Client Reference: 005.10.22

Bushfire Risk Reducers
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BPAD Bushfire Planning & Design
Accredited Practitioner
Level 3

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Should the Client have any concerns arising from this report or its content, they are requested to contact Bushfire Risk Reducers directly.

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DOCUMENT CONTROL **Bushfire Management Plan**

Client: **Orchard (Gibbings) Developments Pty Ltd**

Client Reference: **005.11.22**

Project: **RAL / Subdivision**

Site Location: **26 Gibbings Court, Upper Caboolture**

Version	Date	Status	Changes	Author	Approver
Rev 0	11.10.2022	First Draft		AH	AH
Rev 1	17.10.2022	Final Report		AH	AH

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1.0 Introduction

This Bushfire Management Plan (BMP) has been commissioned by Orchard Property Group in order to support a DA for the subdivision of Lot 4 on SP191667 (the "Subject Lot") into 133 Residential Lots, 1 Local Park and 1 Green Network Lot in 3 Stages of development; and also in compliance with the Building Code of Australia (BCA), in respect of future construction of buildings on proposed Lots.

(MBRC) bushfire hazard overlay mapping does not classify much of the Subject Lot as "bushfire prone area" (BPA), however proposed revegetation of the Green Network Area will create future hazard which this Plan accommodates. The hazard mapping is based on the same modelling used by State Planning Policy- Natural Hazards, Risk and Resilience (December 2013, latest version December 2019) accompanied by *A new methodology for State-wide mapping of bushfire prone areas in Queensland* (CSIRO 2014.

The designation by Council of revegetated land being BPA has two main implications:

1. It requires the production of a BMP which complies with the bushfire hazard overlay code of the Moreton Bay Regional Council Planning Scheme (2016) Part 9.4.1.3 – Emerging Communities Zone Code.
2. It invokes the Building Code of Australia (BCA), requiring compliance with its bushfire related functional performance objectives and with AS3959-2018 *Construction of buildings in bushfire prone areas*. Construction implications for future residential buildings under this Standard are determined by this Plan.

This Bushfire Management Plan objectively determines the nature and severity of potential worst case bushfire in the area, and develops risk mitigation measures to be used in combination with established construction needs in accordance with AS3959-2018. It is the implementation of all these protection measures in combination, that demonstrates the viability and conformance of the proposed development in the development application process.

2.0 Site and Development Description

2.1 Property Description

Site ID:	Lot 4 on SP191667 Parish of Caboolture, County of Stanley.
Current address of property:	26 Gibbings Court, Upper Caboolture QLD 4510.
Local Government Area:	Moreton Bay Regional Council.
Total Area:	16.15ha
Zoning:	Urban Living / Green Network

2.2 Proposed Development

The proposed development is planned to create 133 Residential Lots, 1 Local Park and 1 Green Network Lot.

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2.3 Site Location and Layout

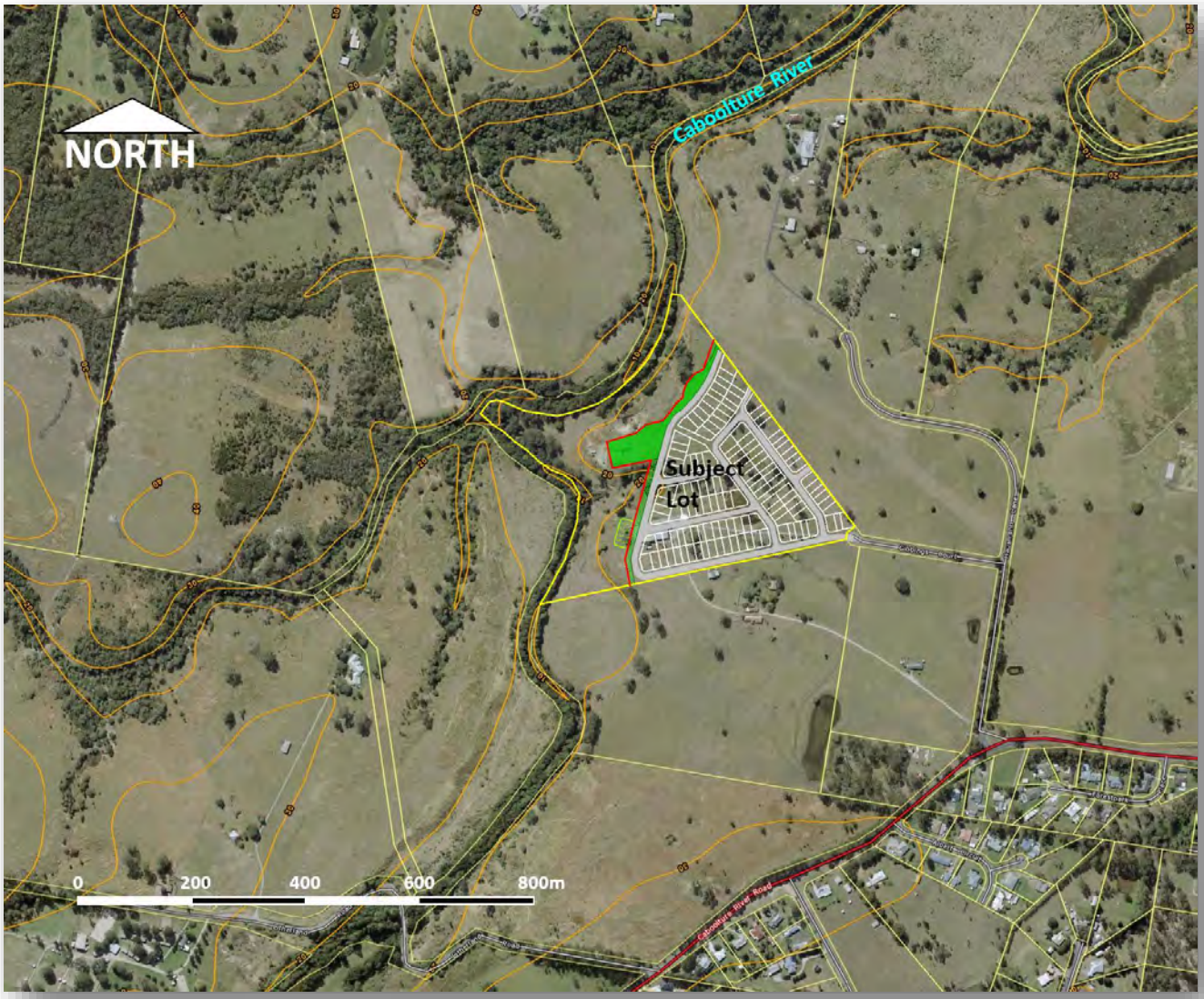

Figure 1. Broader Area showing the location of the proposed development.

Located between the Caboolture River Road and the Caboolture River, the Subject Lot is in a low lying relatively flat area, with river embankments providing short localised slope. The land use has recently involved grazing which has sustained an open grassland vegetation structure. The proposed revegetation / rehabilitation of the western portion of the site will replace the grassland community with a future forest community, representing greater future hazard.

A proposed western perimeter roadway, combined with low hazard landscaping and a mown local park serve to provide a minimum of 25m setback of future hazard from the closest Lot boundaries.

The main line of access / egress is to the east via Gibbings Court and Hausmann Lane, a safe route in a safe direction.

Future Lot Buyers within 100m of future hazard will be made aware of the dwelling construction implications under AS3959-2018, by being provided with a copy of this Plan.

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Given the intent for the Green Network to come under the management of the indigenous traditional owners (Gubbi Gubbi peoples), future fire lines are recommended for consideration, which would support traditional burning and also facilitate the management of the rehabilitation, including weed control.

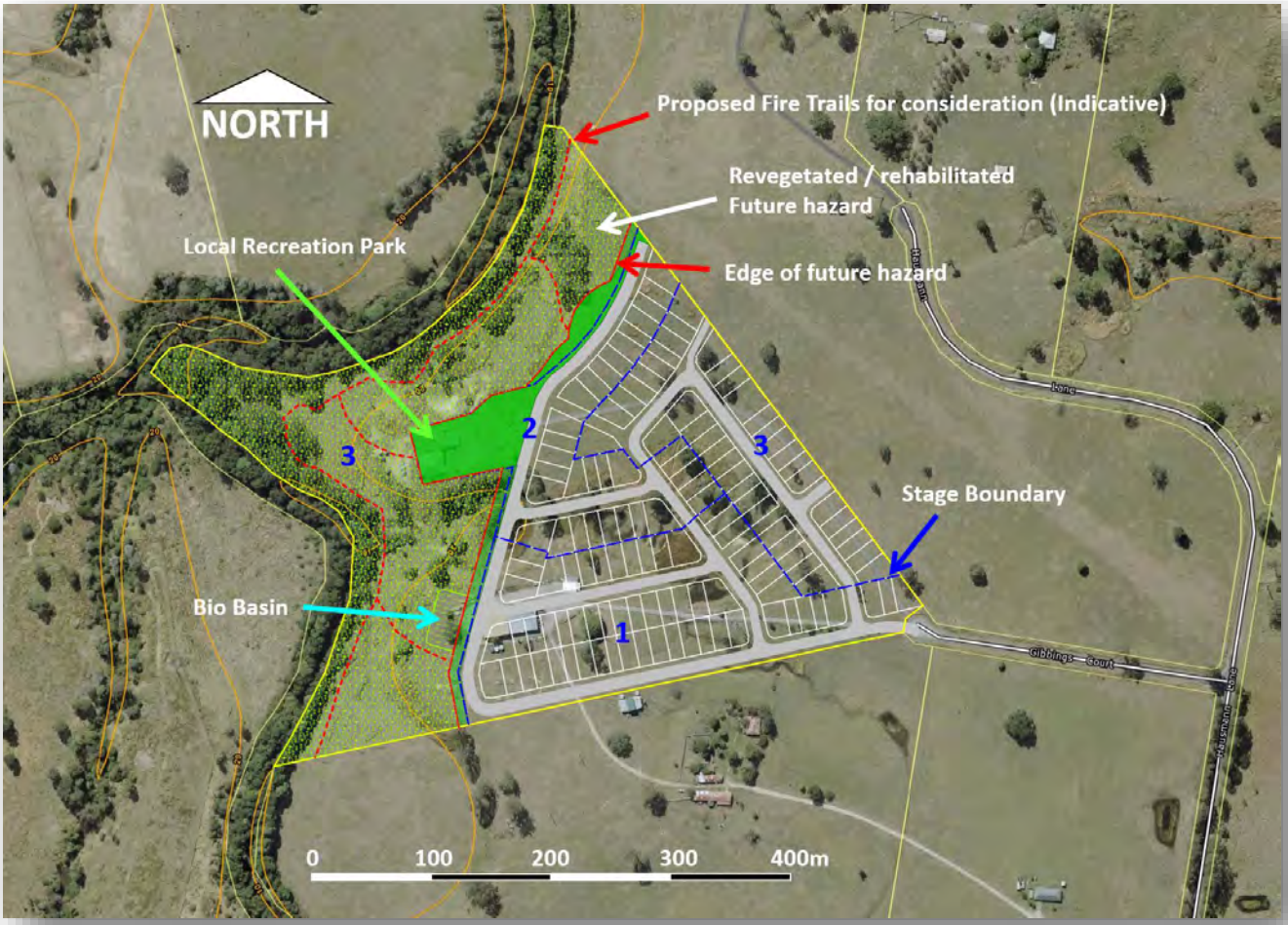

Figure 2. Proposed subdivision showing rehabilitated Green Network as future hazard

The site is within approximately 7km by road of the nearest Queensland Fire and Emergency Services (Caboolture Fire Station).

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3.0 Bushfire Hazard Assessment

3.1 Bushfire hazard classification

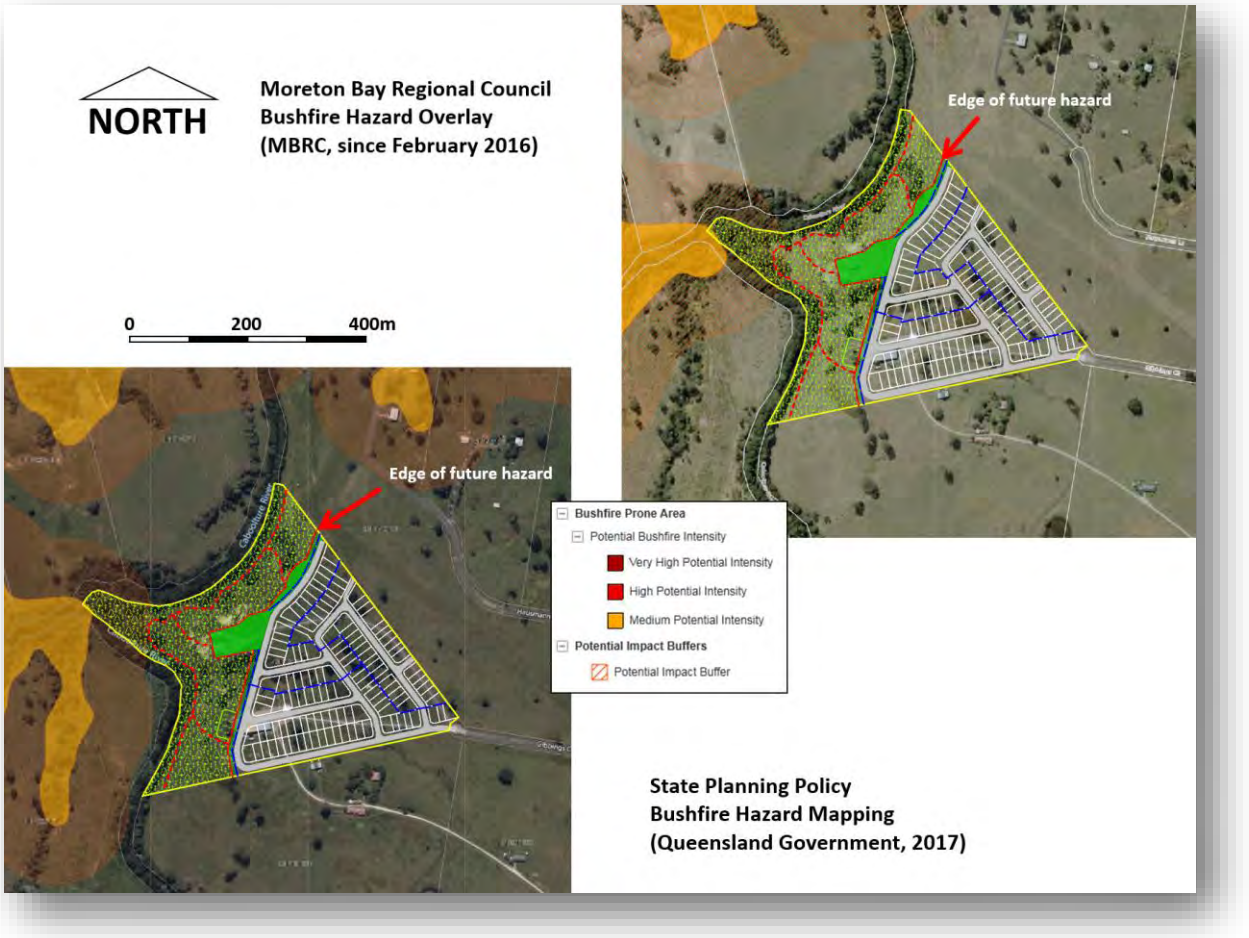

Figure 3. Council bushfire hazard mapping and latest State bushfire hazard mapping

Figure 3 shows the location of the site in relation to designated "bushfire prone area" mapped on the basis of *A new methodology for State-wide mapping of bushfire prone areas in Queensland* (CSIRO 2014), which accompanied State Planning Policy – Natural Hazards, Risk and Resilience (December 2013, latest version July 2017).

The proposed rehabilitation and revegetation of the Green Network will create future hazard as far as the line indicated in Figure 3.

"Bushfire Prone " is defined under the BCA and SPP01/03 as an area **identified as such by Local Government** (using the methodology specified in Appendix 3 of SPP01/03); and using "medium and high hazard" as indicators of bushfire prone land. The BCA calls up AS3959-2018 as providing "Deemed to Satisfy" construction levels for Class 1, 2 and 3 buildings and associated Class 10a structures constructed in bushfire prone areas.

AS3959-2018 specifies building implications within 100m of designated bushfire prone land, or more strictly speaking, within 100m of intact, classified vegetation (50m in the case of grassland). This BMP establishes Bushfire Attack Levels (BALs) for affected Lots, using a combination of Methods 1 and 2 approach under AS3959-2018.

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3.2 Vegetation Assessment, Slope and Separation Distances from Proposed Development

Figure 4 shows the location of the edge of a future forest hazard.

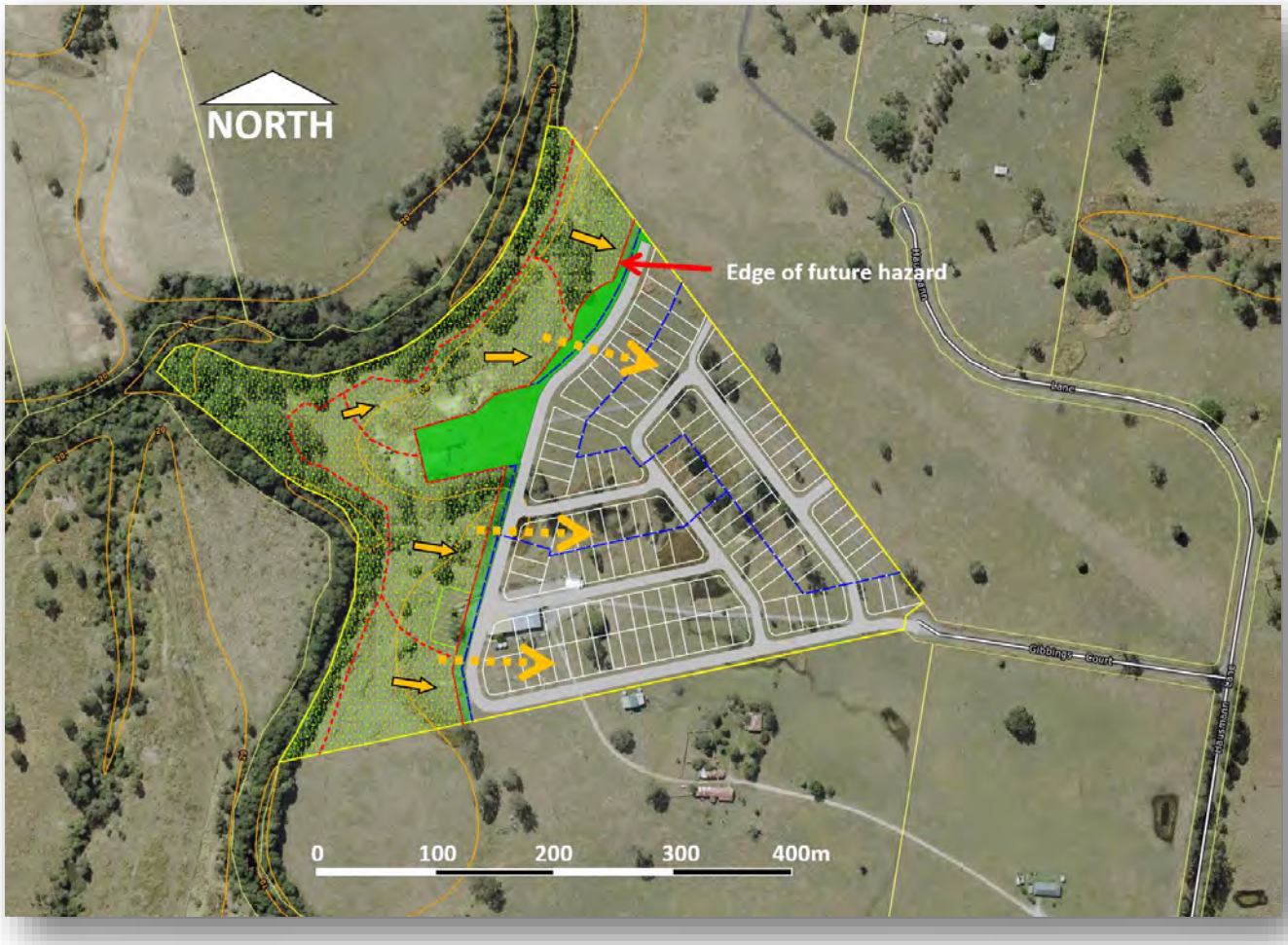

Figure 4. Vegetation and slope combinations for main fire scenarios

The effective slope beneath the future forest hazard is taken to be up to 5° downslope.

Section 6 objectively calculates and determines the potential nature and severity of bushfire attack more thoroughly. This serves as a basis for determining the construction and other bushfire protection measures outlined in this BAL Assessment.

Fuel values attributed under Method 2 of AS3959-2018 are State default values.

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3.3 Fuel Accumulation Values

Figure 5. Fuel Accumulation Values

The Subject Lots currently support predominantly grassland, which bears no relation to the future vegetative structure and fuel loads of the revegetated forest community, once it attains its mature state.

Rehabilitation plantings will be predominantly RE12.3.11 in the large open areas, for which State Government (Queensland Fire and Emergency Services – QFES dataset) attributes a default value of 16t/ha (Vegetation Hazard Class 16.1).

Fire modelling in Section 6 of this Plan applies a value of 16t/ha for Total Available Fuel, of which 13.8t/ha is Surface and Near surface fuel.

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4.0 Site constraints and environmental values which may limit mitigation options

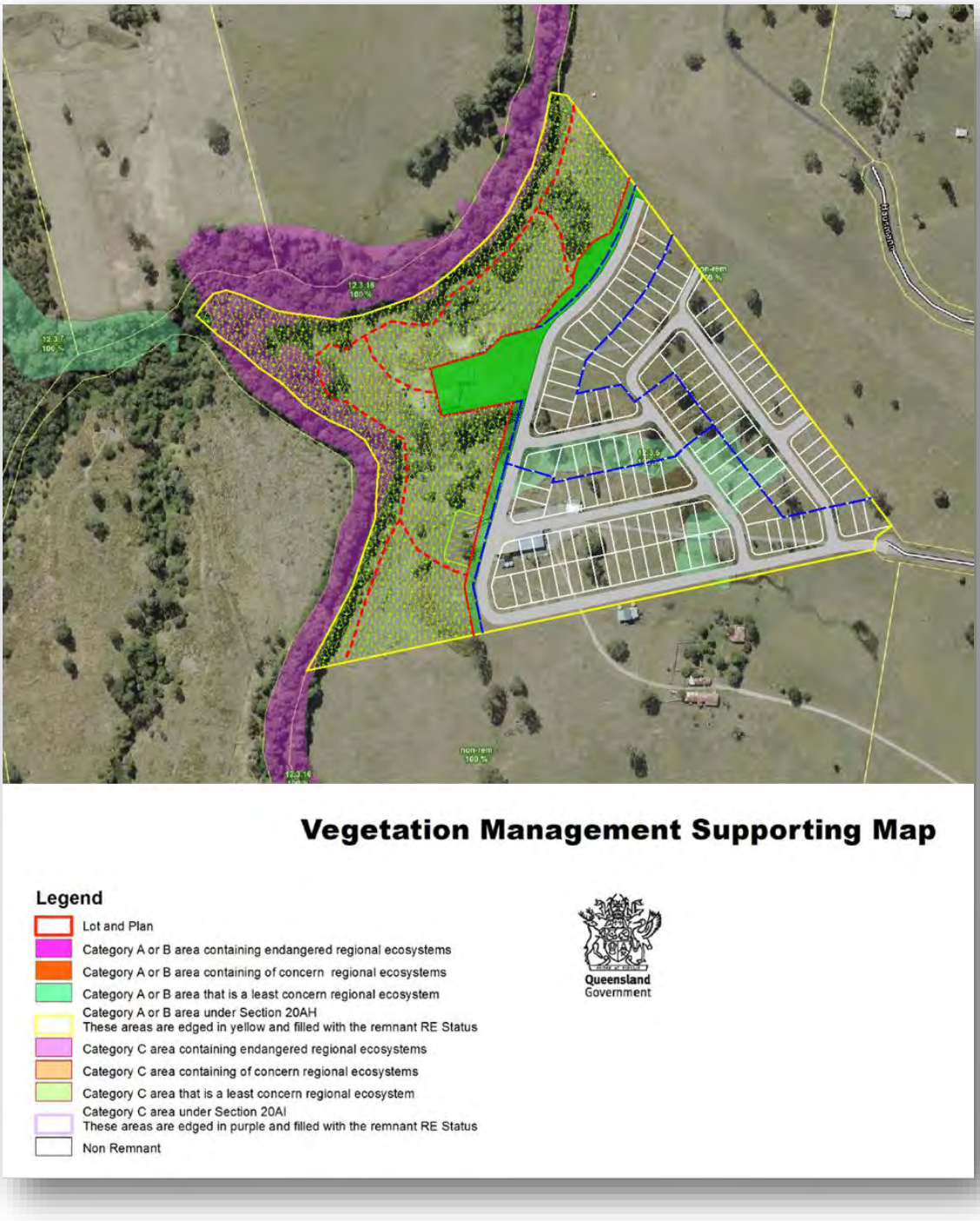

Figure 6. Regional Ecosystem Mapping (Source: Queensland Government)

The Queensland Department of Natural Resources, Mines and Energy (DNRME) shows mapped remnant forest vegetation along the river being RE12.3.16. Regional Ecosystem Pre clearing mapping shows areas of RE12.3.11 in the area generally. Rehabilitation plantings will be RE12.3.11 and in the large open areas.

DNRME provides the following RE Descriptions and optimal fire regimes summarized in Table 1 below.

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Regional Ecosystem	RE Description	Optimal Fire Season Notes
Of Concern RE 12.3.11	Open-forest to woodland of *Eucalyptus tereticornis, E. siderophloia* and *Corymbia intermedia. Corymbia tessellaris, Lophostemon suaveolens* and *Melaleuca quinquenervia* frequently occur and often form a low tree layer. Other species present in scattered patches or low densities include *Angophora leiocarpa, E. exserta, E. grandis, C. trachyphloia, C. citriodora, E. latisinensis, E. tindaliae, E. racemosa, Melaleuca sieberi* and *M. viridiflora. E. seeana* may be present south of Landsborough. Occurs on Quaternary alluvial plains and drainage lines along coastal lowlands. Rainfall usually exceeds 1000mm/y (BVG1M: 16c) Vegetation Hazard Class (VHC) 16.1 16t/ha Total Available Fuel Load (State Default Value)	SEASON: Summer to late-autumn. INTENSITY: Low. INTERVAL: 3-6 years. STRATEGY: Aim to burn 40-60% of any given area. Spot ignition in cooler or moister periods encourages mosaics. ISSUES: Control of weeds is a major focus of planned burning in most areas. Maintain ground litter and fallen timber habitats by burning only with sufficient soil moisture. Burning should aim to produce fine scale mosaics of unburnt areas.

Table 1. Regional Ecosystem present and fire guidelines

Recognising the need for fire of RE12.3.11 it is recommended that fire lines / fire trails are constructed as indicated in Figure 2 to create a mosaic of future burn zones for management of planned and unplanned fire. These same fire trails would provide additional benefits including providing access for reserve management including weed control, and also providing a recreational benefit for residents walking, jogging, riding bicycles or horses.

This assessment is not based on any assumptions regarding prescribed burning with temporary hazard reduction benefits; and has to be based on fuel levels reaching a long term maximum stable state, coinciding with ignition under worst case foreseeable fire weather conditions.

4.1 Fire History and Frequency

This study found no recent evidence of previous fire, however occurrence of future fire at some point is likely.

Section 6 worst case fire scenarios works with worst case fuel accumulation combining with worst case foreseeable fire weather conditions.

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5.0 Specific risk factors associated with the development proposal

5.1 Nature of activities anticipated on site

Normal residential activities are anticipated to occur in the area, which includes the potential inclination of juveniles and others to make temporary "camps" in bushland, and others to undertake illegal dumping or torching of vehicles. The number of fire incidents expected by QFES varies in direct proportion to the numbers of people present. The proposed development does not add significantly to the number of people living in the area and potentially exposed to the effects of fire.

5.2 Numbers of people likely to be present

2 - 4 residents could be expected to be present on each of the new Lots. This represents a significant increase in the number of people living in the area or potentially exposed to unplanned fire, however the design of the proposed development and the bushfire protection measures required under this Plan serve to reduce the associated risk to levels that should be deemed acceptable.

6.0 Nature and Severity of Potential Bushfire Attack

6.1 Bushfire season and Fire Weather

The "typical fire season" in this area peaks between September and November. The predominant winds in the area are south easterly, however during the fire season, hot gusty westerlies of over 30 kph can be expected, with Relative Humidity falling to 15% and less. Temperatures on these days can climb over 35^{o}C , and for two or three days a year, fire weather conditions equivalent to FDI levels of around 50 - 60 can be anticipated. (Note that this is in contrast to the value of 40 which Queensland is currently using in the recently revised AS3959 - 2018).

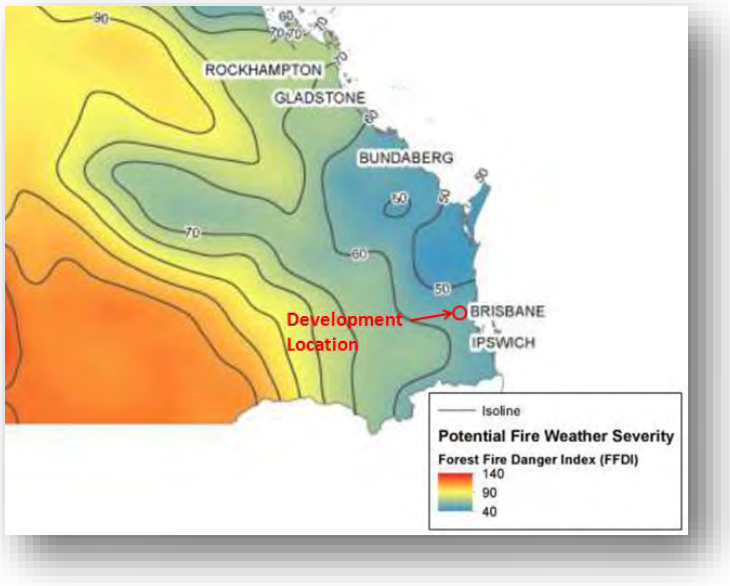

Figure 7. State Government revised FDI values (2014).
State Catalyst mapping applies a FDI value of 55 to the area in question.

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6.2 Anticipated direction of bushfire attack

The orientation of the main fuel area in relation to the built environment aligns with the direction of worst case fire weather conditions for the region, these being westerly to north westerly. The worst case fire scenarios are modelled in Section 6.3.

Bushfire attack comes in a number of forms: direct flame, radiant heat, embers, smoke and wind. Research shows that over 80% of houses lost to bushfire in Australia can be attributed to ember attack, within 100m of bushland.

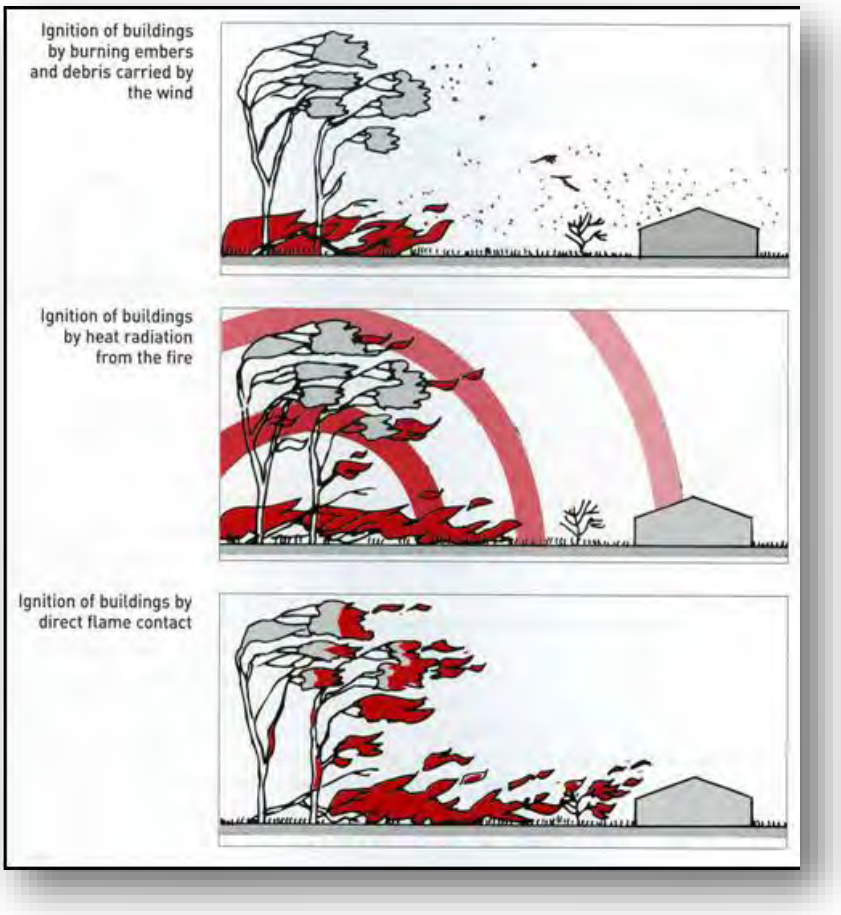

Figure 8. Main Bushfire Attack mechanisms (Image courtesy of Ramsay & Rudolf, 2003)

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6.3 Anticipated severity of bushfire attack

The fuel values from Section 3 are applied along with the other inputs for calculating design fire parameters, summarised in Table 2 below.

Fire Scenario - Future Forest North **Method 2 AS3959-2018** **FDI 55** **Forest @ 16t/ha Total available fuel, 13.8t/ha as surface and near surface fuel.** **Effective Slope under vegetation 5^{o} Downslope**	**Fire Scenario - Future Forest North** **Method 1 AS3959 – 2018** **FDI 40** **Forest** **Effective Slope under vegetation 0^{o} / Flat**
Fire Intensity (Byram, 1959) 10 631kW/m ("MEDIUM")	
Rate of Spread (Noble et al, 1980) 1.29kph	
Flame Height (modified Mc Arthur V equation, NSW RFS 2001) 10.3m	
Flame Width 100m	
Elevation of Receiver 2.4m	
BAL FZ within <9m of intact unmanaged vegetation BAL 40 from 9 - <12m BAL 29 from 12 - <18m BAL 19 from 18 - <25m BAL 12.5 from 25 – <100m	BAL FZ within <12m of intact unmanaged vegetation BAL 40 from 12 - <16m BAL 29 from 16 - <24m BAL 19 from 24 - <34m BAL 12.5 from 34 – <100m

Table 2. Calculated fire parameters for potential bushfire characteristics, and methods used.

Site specific fire modelling by Method 2 under AS3959-2018 predicts a lesser fire scenario than Method 1 under this Standard, despite applying a more robust value for FDI.

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Projected fireline intensity in terms of latest State bushfire hazard assessment methodology is in the “Medium” range, between 4 000 – 20 000kW/m of fire line . This validates the BPA status of the future rehabilitation area and its 100m “potential impact buffer”.

The Radiant Heat Flux curves for the design fires above are plotted in Figure 9 below, comparing Methods 1 and 2 under AS3959-2018.

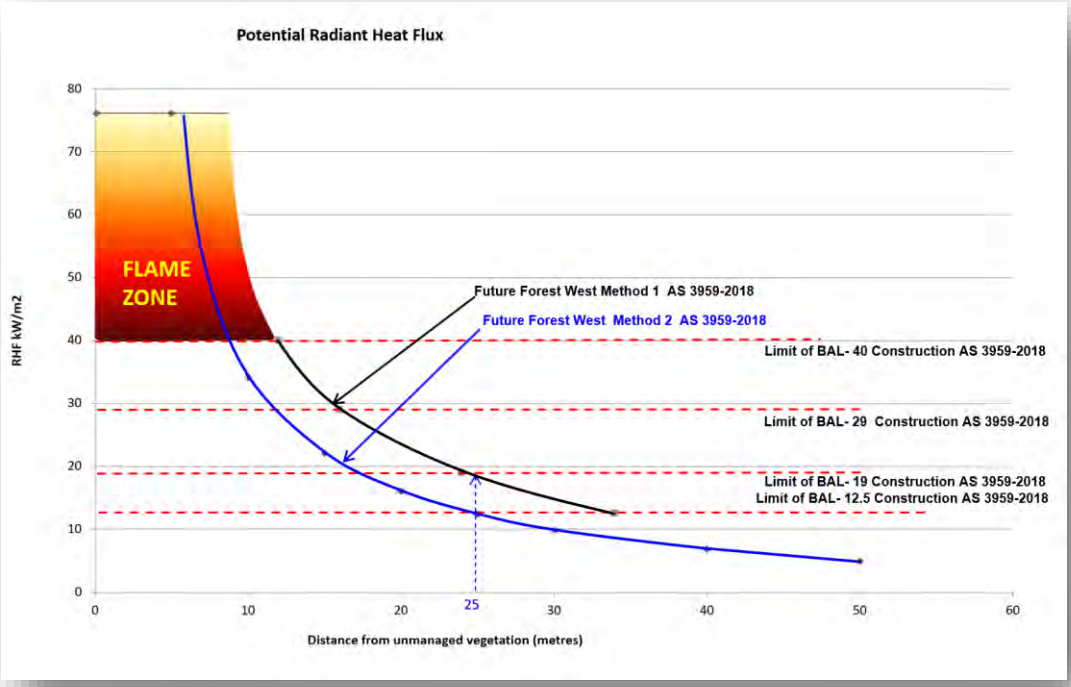

Figure 9. Radiant Heat Flux Predicted by Methods 1 and 2 under AS3959 - 2009.

The BAL ratings from Figure 9 are shown as BAL Contours in Figure 11.

The significance of the radiant heat flux levels discussed is shown below in Table 3.

Radiant Heat Flux (kW/m²)	Likely Effects
> 40 - 110	Flame Zone. Even the strongest toughened glass fails.
29 - 40	Latest technology in toughened glass may survive. Most will not. Timber ignites without pilot flame. Limit of BAL-40 Construction AS3959 - 2018.
29	Ignition of timbers without piloted ignition (3 minutes exposure) during the passage of a bushfire. Most types of toughened glass could fail. Limit of BAL-29 Construction AS3959 - 2018.
19	Screened float glass could fail during the passage of a bushfire.Limit of BAL-19 Construction AS3959 - 2018.
12.5	Standard float glass could fail during the passage of a bushfire. Limit of BAL-12.5 Construction AS3959 - 2018. Some timbers can ignite with prolonged exposure and with pilot ignition sources (eg embers)
10	Critical conditions. Firefighters not expected to operate in these conditions. Considered life threatening in under a minute in protective equipment. Fabrics inside a building could ignite spontaneously with long exposures.
7	Likely fatal to unprotected persons after exposure of several minutes.
4.7	Extreme conditions. Firefighter in protective clothing will feel pain after 60 seconds exposure.
3	Hazardous conditions. Firefighters expected to operate for a short period (10 minutes).
2.1	Unprotected person will feel pain after 1 minute exposure - non fatal.

Table 3. Significance of various RHF levels (Source: NSW RFS, 2006)

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7.0 Bushfire Protection Measures in Combination

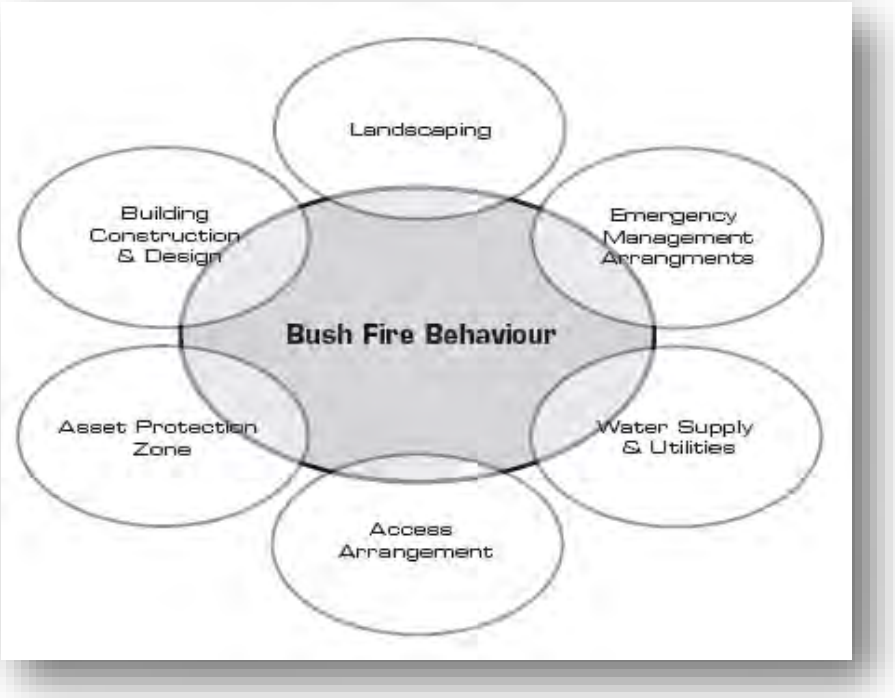

Figure 10. Bushfire Planning Measures in Combination (Source: NSW RFS, 2006)

Figure 10, taken from *Planning for Bushfire Protection* (NSW Rural Fire Service, 2006) illustrates that there are other factors and measures which need to be integrated to mutually support one another in providing protection against bushfire.

Simply removing the hazard (bushland) is one possible way of removing risk to life and property, but this approach is not desirable. The safety of life and property can be achieved whilst retaining the natural amenity and value of bushland areas, provided these integrated bushfire protection measures are applied.

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7.1 Building Construction and Design

Section 6.3 (Table 2 and Figure 9) show the construction requirement for future dwellings on new Lots. Any Class 10a structure built within 6m of any residential building constructed to BAL 12.5 will also need to be constructed in accordance with this Standard.

Figure 11. BAL Contours for proposed development

Figure 11 shows those Lots that will require construction to a minimum of BAL 12.5 (Sections 3 and 5) under AS3959-2018.

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7.2 Asset Protection Zones and Landscaping

Asset protection zones are the most strategically valuable defense against radiant heat and flame, and to a lesser extent embers.

The landscaping plan for all dwellings on Lots affected by BAL 12.5 construction shall construct and maintain an "Inner Protection Area" (IPA) for the entire unbuilt portion of the Lot, effectively free of available fuel.

- Plants retained in or introduced into the IPA should be selected based on low combustibility, by virtue of high moisture content, low volatile oil content, high leaf mineral levels, large fleshy leaves, absence of shedding bark.
- Plant arrangement is just as important as low combustibility. Plants should be placed so as to minimize either vertical or horizontal connectedness of plant material. Appendix 1 provides examples of less hazardous native plant species.
- Combustible vegetation shall not be allowed to come into contact with combustible parts of buildings.
- Trees should not be allowed to directly overhang roof lines.
- Regular yard maintenance should be undertaken to remove available fine fuels and debris, particularly throughout the fire season.

An Outer Protection Area involves removal of the understorey so as to deprive an advancing fire front of its fuel continuity, and thereby collapsing the fire front. In this case canopy fire is unlikely but possible. In an OPA the separation between mature tree canopies should be a minimum of >2m, ideally >5m. Grass height should be below 100mm. A mid storey should not be allowed to develop.

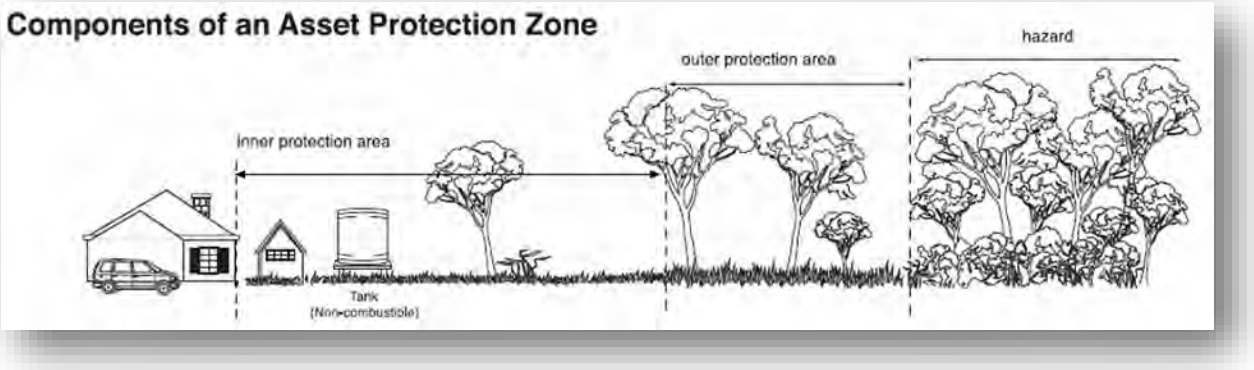

Figure 12. Components of an Asset Protection Zone (APZ)

It is recommended that in this instance, APZs are constructed and maintained as IPA.

7.3 Access and Egress Management

The site is within approximately 7km by road of the nearest Queensland Fire and Emergency Services (Caboolture Fire Station).

Access and egress for fire fighters will be provided in accordance with the Queensland Fire and Emergency Services Guideline (*Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots, 2015).* The guideline is attached as Appendix 2.

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The proposed driveways for the subdivision provide a suitable access for emergency services vehicles and the perimeter road and internal roads provide options for access and egress in a safe direction along safe routes.

The proposed fire trail network should be constructed to a minimum formed width of 4m with 4m (minimum) overhead clearance and 1m (minimum) clear of vegetation (slashed) either side.

Passing bays should be made available at a maximum spacing of 200m.

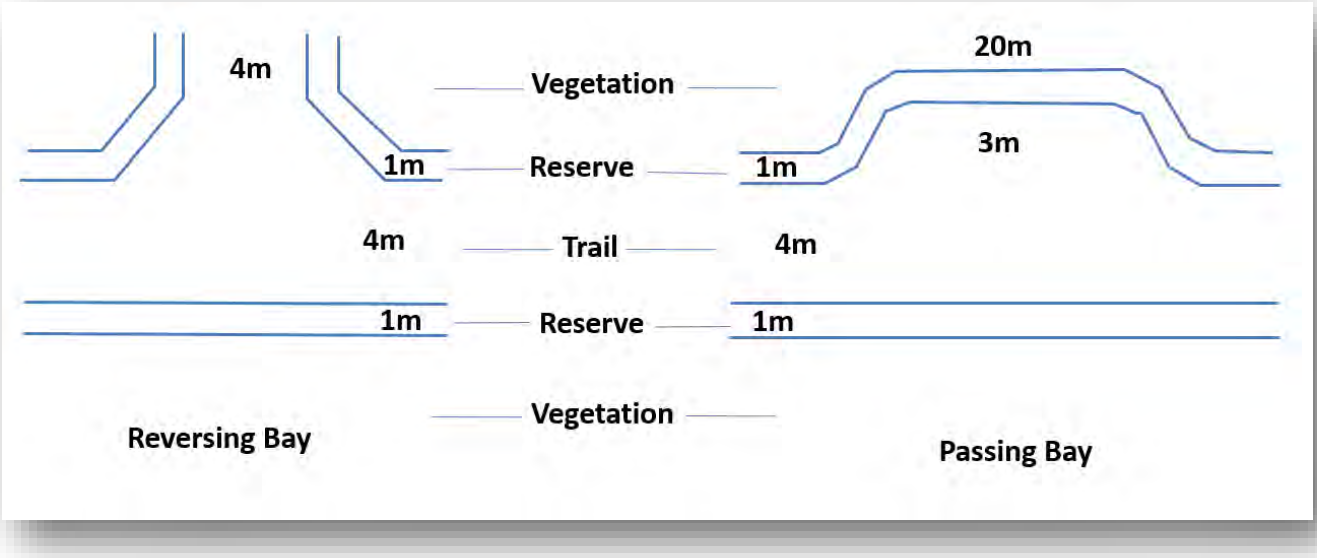

Figure 13. Regular passing bays.

Access to fire trails should be protected from unauthorised vehicular use by bollards and padlocked gates / sliprails.

7.4 Water Supplies and Utilities

Water supply for the development will be connected to Council mains reticulated supply, with hydrants installed in accordance with AS2419.1-2005 and with volumes and pressure under the control of Council water utilities provider. Fire fighting water supply and fire hydrants will be provided in accordance with the Queensland Fire and Emergency Services Guideline (*Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots, 2015).*

Electricity supply to the site shall be supplied underground.

Any reticulated or bottled gas shall be installed and maintained in accordance with AS1596 – 2002. Metal piping is to be used. Any fixed LPG tanks shall be kept clear of flammable materials, and located on the non hazard side of the building. Any gas cylinders which need to be kept close to a building shall have release valves directed away from the building. Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used.

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7.5 Fire Fighting and Emergency Management Arrangements

The development is serviced by the existing roads and proposed driveways for Emergency Services use. Asset Protection Zone maintenance will prevent the development of hazard within the proximity of dwellings so that defense of properties can be conducted with relative safety.

Obstructions to access onto individual Lots and the rear of buildings should be avoided.

Residents shall be made aware of the existence of this Plan, and their need to comply with the relevant provisions, in particular building construction, APZ maintenance, optimizing access around buildings and emergency response preparations.

Residents shall decide on their Stay and Defend / or Go Early strategy before each fire season so as to ensure this decision is not made too late, when smoke and emergency vehicles prevent an orderly evacuation. Staying to defend is a viable and preferable option for the proposed development.

Residents staying to defend should ensure that they have adequate protective clothing , including full length cotton or denim garments, sturdy boots, gloves, smoke mask (minimum P2 with valves) and smoke goggles.

Appendix 2 provides guidance for Residents' Emergency Management Planning in relation to bushfire.

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8.0 Assessment of proposal against Moreton Bay Regional Planning Scheme (2020) Table 9.4.1.3

Emerging Community Zone Code (PO67 - 70)

Performance Outcome	Assessment / Acceptable Outcomes
8.1 (PO 67) Lots are designed to: a. minimise the risk from bushfire hazard to each lot and provide the safest possible siting for buildings and structures; b. limit the possible spread paths of bushfire within the reconfiguring; c. achieve sufficient separation distance between development and hazardous vegetation to minimise the risk to future buildings and structures during bushfire events; d. maintain the required level of functionality for emergency services and uses during and immediately after a natural hazard event.	E67 is applied in that: Reconfiguring the lot ensures that all new lots are an appropriate size, shape and layout to allow for the siting of future buildings being located: a. within an appropriate development footprint; b. within the lowest hazard locations on the lots; c. to achieve a minimum separation between the development footprint and the source of bushfire hazard by a distance sufficient to avoid construction above BAL 29 under AS3959-2018; d. to achieve a minimum separation between the development footprint and any retained vegetation strips or small areas of vegetation by a distance sufficient to avoid construction above BAL 29 under AS3959-2018; e. away from ridgelines and hilltops; f. on land with a slope of less than 15%; g. away from north to west facing slopes.
8.2 (PO 68) a. Lots provide adequate water supply and infrastructure to support fire-fighting.	E68 is applied in that: a. Lots have access to a reticulated water supply provided by a distributer retailer for the area.
8.3 (PO 69) Lots are designed to achieve: a. safe site access by avoiding potential entrapment situations; b. accessibility and manoeuvring for fire-fighting during bushfire.	E69 is applied in that: Reconfiguring the lot ensures new lots are provided with: a. direct road access and egress to public roads; b. private driveways do not exceed 100m and the route is safe for access and egress in the event of bushfire; c. driveway gradients are less than 12.5%; d. driveway widths are a minimum of 3.5m.
8.4 (PO 70) The road layout and design supports: a. safe and efficient emergency services access to all lots and manoeuvring within the subdivision; b. availability and maintenance of access routes for the purpose of safe evacuation.	E70 is applied in that reconfiguring a lot provides a road layout which: a. includes a perimeter road that separates the new lots from hazardous vegetation, with: i. a cleared width of 20m; ii. road gradients less than12.5%; iii. pavement and surface treatment capable of being used by emergency vehicles; iv. Turning areas for fire appliances in accordance with Qld Fire and Emergency Services' Fire Hydrant and Vehicle Access Guidelines.

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	b. Fire trails are incorporated in the proposed layout with: i. A minimum cleared width of 6m and a minimum formed width of 4m; ii. Gradient not exceeding 12.5%; iii. Cross slope not exceeding 10%; iv. A formed width and erosion control devices to the standards specified in Planning scheme policy – Integrated design; v. Passing bays and reversing/turning bays every 200m; vi. An access easement that is granted in favour of the Council and the Queensland Fire and Emergency Service of on puclic land. c. Excludes cul-de-sacs. d. Excludes dead end roads.

9.0 Assessment of proposal against State Planning Policy 2019

State Planning Policy – Natural hazards, risk and resilience (SPP, December 2013, latest version December 2019) replaces State Planning Policy 1/03 *Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.* The SPP Guideline – Natural hazards, risk and resilience provides a methodology for determining Bushfire Hazard based on Potential Fireline Intensity. The methodology and hazard mapping has been included in Section 3.1 of this Plan in establishing the adjacent area as potentially hazardous and as a bushfire prone area.

The SPP guideline provides development assessment benchmarks to ensure that State interests are appropriately considered in relation to natural hazards, including bushfire hazard areas. These provisions serve as general guidelines to either avoid or otherwise adequately mitigate bushfire risk. Specific guidelines for bushfire hazard overlay codes are yet to be provided, and this detail is addressed by this Plan in terms of meeting the current requirements of Local Government in Section 8 above.

Interim Development Assessment Benchmarks	**Solutions Provided**
(3) Development avoids natural hazard areas or where it is not possible to avoid the natural hazard area, development mitigates the risks to people and property to an acceptable or tolerable level, and	This Plan establishes the nature and potential severity of the adjacent hazard and provides a combination of bushfire protection measures to mitigate risk including park management, building construction, asset protection zones, access, water supplies and utilities, and emergency management arrangements.
(4) Development supports, and does not unduly burden, disaster management	The combined effect of the bushfire protection measures specified by this Plan serves to reduce risk to a low level and ensure resilience

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response or recovery capacity and capabilities, and	and preparedness for unplanned fire so that the response or recovery capacity and capability of emergency services is not unduly burdened or impeded. This Plan serves to protect life and property from bushfire without depending on emergency services for protection.
(5) Development directly, indirectly and cumulatively avoids an increase in the severity of the natural hazard and the potential for damage on the site or to other properties, and	The development increases the nature of the existing hazard, however the site layout and landscaping on the site is designed to moderate the exposure of buildings. The potential for damage to other properties is not increased as a consequence of the proposed development.
(6) Risks to public safety and the environment from the location of hazardous materials and the release of these materials is avoided, and	Hazardous materials are not stored in quantities or locations on the site which would pose a risk to the public or the environment.
(7) The natural processes and the protective function of landforms and the vegetation that can mitigate risks associated with the natural hazard are maintained or enhanced.	The development maintains the natural processes and protective function of vegetation that previously existed for the site.

10.0 Recommendations

1. That any new residential building and any other Class 10a structure within 6m of it, shall be constructed in accordance with AS3959-2018 and the guidelines provided in Section 6.3 of this BMP, and in particular Table 2 and Figure 11. Builders shall warrant that they have a copy of this Standard, and that it shall be used consistently throughout the design and construction of any residential building.

2. The Asset Protection Zones described in Sections 6.3 and 7.2 of this report shall be constructed and maintained in perpetuity.

3. Reticulated water supplies shall be fully installed in accordance with the requirements of Section 7.4 of this Plan.

4. Lot buyers within 100m of future hazard should be made aware of the existence of this Plan and their responsibilities outlined within it, in particular construction, asset protection zone and emergency management.

5. Deviation from the actions or recommendations outlined in this Plan will require notification of the Author and potentially reworking bushfire protection measures accordingly. Should the area be impacted by unplanned bush fire, this Plan should be reviewed for adequacy, and potentially be revised to account for conditions that are different to those existing at the time of preparing this Plan.

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11.0 Summary

The area of "hazard" faced by the proposed development is sufficiently large to be treated as future potential hazard. The likelihood of bushfire regarded as possible over the long term. The likely adverse consequences of bushfire are minimised as a result of this Plan, and the current design of the proposal.

Along with adequate water supply and emergency management arrangements, compliant construction under AS3959-2018 and APZs to reduce the exposure of life and property to bushfire, these combined measures assist prepare residents for the possibility of fire in the area.

12.0 References

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Appendix 1

Less combustible native plants list

Source: Bowden, J (1999)

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APPENDIX 10

Fire Retardant Native Plants

Form: S = Shrub; T = Tree; V = Vine; H = Herb; Gc = Ground cover; eO = epyphytic Orchid; eF = epyphytic Fern; tF = terrestrial Fern.

Fire-retardance: Lm = due to leaf water contents; St = due to salt content; Sl = succulent leaves

Comments: Wb = suitable for windbreak/fire barrier; Ad = suitable as addition to windbreak/fire barrier but not as main species; Us = suitable for understory of windbreak/fire barrier; Oa = suitable for open areas near house; Sa = suitable for sheltered areas near house; Pf = suitable if protected from direct flames; De = Deciduous in winter, in flower or in dry periods

(-) = may not occur naturally in Pine Rivers Valley but has not proved invasive.

Fire-Retardant Plants for Small Gardens

Scientific Name	Common Name	Form	Fire Retardance	Comments
GYMNOSPERMS				
Zamaceae				
Lepidozamia peroffskyana	Shining Burrawang	S	Lm	Us Sa
Macrozamia lucida	Pineapple Zamia	S	Lm	Us Sa
Macrozamia miquelii	Wild Pineapple	S	Lm	Us Oa Sa
Agavaceae				
Cordyline petiolaris	Broad-leaf Palm Lily	S	Lm	Us Sa
Cordyline rubra	Red-fruit Palm Lily	S	Lm	Us Sa
Cordyline strica	Slender Palm Lily	S	Lm	Us Sa
MONOCOTYLEDONS				
Amaryllidaceae				
Crinum pedunculatum	River Lily	H	Lm Sl	Us Oa Sa
Doryanthes palmeri (-)	Spear Lily	H	Lm Sl	Us Oa Sa
Proiphys cunninghamii	Brisbane Lily	H	Lm Sl	Us Sa
Araceae				
Alocasia brisbanensis	Cunjevoi	H	Lm	Us Sa
Gymnostachys anceps	Settlers Flax	H	Lm	Us Sa
Pothos longipes	Pothos	V	Lm	Us Sa
Typhonium brownii	Stinking Lily	H	Lm	Us Sa
Arecaceae				
Linospadix monostachya	Walking Stick Palm	P	Lm	Us Sa
Commelinaceae				
Aneilema acuminatum	Aneilema	H Gc	Lm	Us Sa
Aneilema biflorum (-)	Aneilema	H Gc	Lm	Us Sa
Commelina cyanea	Scurvy Plant	H Gc	Lm	Us Op Sa
Pollia crispata	Snake Weed	H Gc	Lm	Us Sa
Pollia macrophylla	Large Snake Weed	H Gc	Lm	Us Sa
Dioscoraceae				
Dioscorea transversa	Native Yam	V	Lm	Us Sa
Lillaceae				
Bulbine bulbosa (-)	Bulbine Lily	H	Lm Sl	Oa
Dianella brevipedunculata	Blue Flax Lily	H	Lm	Us Oa Sa
Dianella caerulea	Blue Flax Lily	H	Lm	Us Oa Sa
Dianella revoluta	Flax Lily	H	Lm	Us Oa Sa
Drymophila moorei (-)	Orange Berry	H	Lm	Us Sa
Tripladenia cunninghamii	Bush Lily	H	Lm	Us Sa
Orchidaceae				
Dendrobium gracilicaule	Spotted Orchid	eO	Lm	Sa
Dendrobium X gracillimum	Natural Hybrid	eO	Lm	Sa
Dendrobium monophyllum	Lily of the Valley Orchid	eO	Lm	Sa
Dendrobium schoeninim (D. beckleri)	Pencil Orchid	eO	Lm	Sa
Dendrobium speciosum	King Orchid	eO	Lm	Sa
Dendrobium teretifolium	Bridal Veil Orchid	eO	Lm	Sa
Dendrobium tetragonum	Spider Orchid	eO	Lm	Sa
Philesiaceae				
Eustrephus latifolius	Wombat Berry	V	Lm	Us Oa Sa
Geitonoplesium cymosum	Scrambling Lily	V	Lm	Us Sa
Philydraceae				
Philydrum lanuginosum	Frogsmouth	aH	Lm Sl	Oa Wet areas
Smilacaceae				
Smilax glycophylla	Sweet Sarsparilla	V	Lm	Us Sa
Xanthorrhoeaceae				
Lomandra confertifolia	Mat Rush	H	Lm	Oa
Lomandra hystrix	Creek Mat Rush	H	Lm	Us Sa
Lomandra longifolia	Long-leaf Mat Rush	H	Lm	Us Oa Sa
Lomandra filiformis	Fine-leaf Mat Rush	H	Lm	Oa
Lomandra multiflora	Many-flower Mat Rush	H	Lm	Oa
Lomandra spicata	Mountain Mat Rush	H	Lm	Us Oa Sa
Zingiberaceae				
Alpinia arundeliana	Wild Ginger	H	Lm	Us Sa
Alpinia coerulea	Native Ginger	H	Lm	Us Sa

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Scientific Name	Common Name	Form	Fire Retardance	Comments
DICOTYLEDONS				
Aizoaceae				
Carpobrotus glaucescens	Pig Face	H Gc	Lm Sl	Oa
Acanthaceae				
Graptophyllum excelsum (-)	Scarlet Fuchsia	S	Lm	Us Sa
Graptophyllum spinigerum	Samford Holly	S	Lm	Us Sa
Pseuderanthemum tenellum	Pseuderanthemum	H	Lm	Us Sa
Pseuderanthemum variabile	Love Flower	H	Lm	Us Sa
Apiaceae				
Centella australis	Pennywort	H Gc	Lm	Oa
Hydrocotyle acutiloba	Pennywort	H Gc	Lm	Us Sa
Hydrocotyle pedicellosa	Pennywort	H Gc	Lm	Us Sa
Apocynaceae				
Alyxia ruscifolia	Chain fruit	S	Lm	Us Sa
Carissa ovata	Current Bush	S	Lm	Us Oa Sa
Neisosperma poweri (-)	Milkbush	S	Lm	Us Sa
Ochrosia moorei (-)	Southern Ochrosia	S	Lm	Us Sa
Parsonsia lenticellata	Narrow-leaf Silkpod	V	Lm	Us Sa
Parsonsia lilacina	Delicate Silkpod	V	Lm	Us Sa
Tabernaemontana pandacaqui	Banana Bush	S	Lm	Us Sa
Aristolochiaceae				
Aristolochia sp. aff. pubera	Pipe Vine	V	Lm	Us Sa
Aristolochia praevenosa	Richmond Birdwing Vine	V	Lm	Us Sa
Asclepiadaceae				
Hoya australis	Wax Flower	V	Lm	Us Sa
Marsdenia longiloba	Slender Milk Vine	V	Lm	Us Sa
Secamone elliptica	Corky Milk Vine	V	Lm	Us Sa
Tylophora paniculata	Thin-leaf Tylophora	V	Lm	Us Sa
Bignoniaceae				
Pandorea floribunda	New sp. Pine R	V	Lm	Us Oa Sa
Pandorea jasminoides	Bower of Beauty	V	Lm	Us Oa Sa
Caesalpineaceae				
Cassia artemisioides (-)	Silver Cassia	S		Oa
Campanulaceae				
Lobelia trigonocaulis	Forest Lobelia	H Gc	Lm	Us Oa
Wahlenbergia gracilis	Bluebells	H		Oa
Capparaceae				
Capparus arborea	Native Caper	S/T	Lm	Us Sa
Capparis sarmentosa	Scrambling Caper	V	Lm	Us Sa

Scientific Name	Common Name	Form	Fire Retardance	Comments
Celastraceae				
Cassine australis	Red Olive Berry	S/T	Lm	Us Sa
Denhamia celastroides	Orange Boxwood	S/T	Lm	Us Sa
Denhamia pittosporoides	Orange Boxwood	S/T	Lm	Us Sa
Maytenus bilocularis	Orangebark	S/T	Lm	Us Sa
Chenopodiaceae				
Einadia hastata	Berry Salt Bush	S Gc	St	Oa
Enchylaena tomentosa	Ruby Salt Bush	S Gc	St Sl	Oa
Halosarcia indica	Samphire	S Gc	St Sl	Oa Salty soil
Sarcocornia quinqueflora	Samphire	S Gc	St Sl	Oa Salty soil
Suaeda australis	Seablite	S Gc	St Sl	Oa Salty soil
Suaeda arbusculoides	Jellybean Plant	S Gc	St Sl	Oa Salty soil
Convolulaceae				
Convolulus erubescens	Australian Bindweed	V	Lm	Oa
Dichondra repens	Kidney Weed	H Gc	Lm	Us Sa
Polymeria calycina	Swamp Bindweed	V	Lm	Oa
Cunoniaceae				
Aphanopetalum resinosum	Gum Vine	V Gc	Lm	Us Sa
Vesselowskya rubifolia (-)	Southern Marara	S/T	Lm	Us Sa
Davidsoniaceae				
Davidsonia pruriens (-)	Davidson's Plum	T	Lm	Us Sa
Dilleniaceae				
Hibbertia aspera	Rough Guinea Flower	S	Lm	Oa
Hibbertia dentata	Toothed Guinea Flower	V	Lm	Us Oa Sa
Hibbertia linearis	Showy Guinea Flower	S	Lm	Oa
Hibbertia obtusifolia	Hoary Guinea Flower	S	Lm	Oa
Hibertia stricta	Erect Guinea Flower	S	Lm	Oa
Hibbertia scandens	Twining Guinea Flower	V	Lm	Us Oa Sa
Elaeocarpaceae				
Elaeocarpus reticulatus	Blueberry Ash	S/T	Lm	Us Oa Sa
Epacridaceae				
Trochocarpa laurina	Tree Heath	S/T	Lm	Us Sa
Escalloniaceae				
Abrophyllum ornans	Native Hydrangea	S	Lm	Us Sa
Polyosma cunninghamii	Featherwood	S/T	Lm	Us Sa
Euphorbiaceae				
Acalypha capillipes	Small-leaf Acalypha	S	Lm	Us Sa
Acalypha eremorum	Native Acalypha	S	Lm	Us Sa
Acalypha nemorum	Southern Acalypha	S	Lm	Us Sa
Actephila lindleyi	Actephila	S/T	Lm	Us Sa
Alchornea ilicifolia	Native Holly	S	Lm	Us Sa
Breynia oblongifolia	Native Coffee Bush	S	Lm	Us Oa Sa
Cleistanthes cunninghamii	Cleistanthes	S/T	Lm	Us Sa

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Scientific Name	Common Name	Form	Fire Retardance	Comments
Croton phlebaliodes	Narrow-leaf Croton	S	Lm	Us Sa
Croton verreauxii	Native Cascarilla	S/T	Lm	Us Sa
Macaranga tanarius	Macaranga	S/T	Lm	Us
Mallotus claoxyloides	Scrub Odour Bush	S/T	Lm	Us Sa
Omalanthus nutans (*O. populifolius*)	Qld Bleeding Heart	S/T	Lm	Us Sa
Eupomatiaceae				
Eupomatia bennettii	Small Bolwarra	S	Lm	Us Sa
Eupomatia laurina	Bolwarra	S	Lm	Us Sa
Escaloneaceae				
Cuttsia viburnea (-)	Native Elderberry	T	Lm	Us Sa
Fabaceae				
Abrus precatorius	Crabs Eye Vine	V	Lm	Us Oa Sa
Aotus lanigera	Pointed Aotis	S	Lm	Oa Sa
Glycine clandestina	Twining Glycine	V	Lm	Oa
Glycine tomentella	Wooly Glycine	V	Lm	Oa
Hardenbergia violacea	False Sarsparilla	V	Lm	Oa
Hovea linearis	Common Hovea	S	Lm	Oa
Hovea longipes (-)	Brush Hovea	S	Lm	Sa
Indigophora australis	Australian Indigo	S	Lm	Oa
Kennedia rubicunda	Dusky Coral Pea	V	Lm	Oa
Oxylobium ilicifolium (-)	Holly Pea	S	Lm	Oa
Oxylobium scandens (-)	Netted Shaggy Pea	S	Lm	Oa
Pultenaea retusa	Blunt-leaf Bush Pea	S	Lm	Oa
Pultenaea spinulosa (-)	Prickly Pea	S	Lm	Oa
Pultenaea villosa (-)	Hairy Bush Pea	S	Lm	Oa
Swainsona galegifolia	Darling Pea	S	Lm	Oa
Goodeniaceae				
Goodenia rotundifolia	Star Goodenia	H Gc	Lm	Oa
Scaevola aemula (-)	Fairy Fan Flower	H Gc	Lm	Oa
Scaevola albida (-)	Fan Flower	H	Lm	Oa
Scaevola calendulacea (-)	Scented Fan Flower	H Gc	Lm	Oa
Scaevola ramosissima (-)	A Fan Flower	H Gc	Lm	Oa
Lamiaceae				
Ajuga australis	Southern Bugle	H	Lm	Oa
Plectranthus argentatus (-)	Silver Native Coleus	H	Lm	Us Sa
Plectranthus graveolens	Native Coleus	H	Lm	Us Sa
Plectranthus parviflorus	Cockspur Flower	H	Lm	Us Sa
Prostanthera ovalifolia	Oval-leaf Mint Bush	S	Lm	Os Sa
Lauraceae				
Cryptocarya laevigata	Glossy Laurel	S/T	Lm	Us Sa
Cryptocarya meisneriana	Thick-leaf Laurel	S/T	Lm	Us Sa
Leeaceae				
Leea indica (-)	Bandicoot Berry	S	Lm	Us Sa

Scientific Name	Common Name	Form	Fire Retardance	Comments
Lythraceae				
Lagerstroemia archeriana (-)	Native Crepe Myrtle	S/T	Lm	Us Oa Sa De
Malvaceae				
Pavonia hastata(-)	Pavonia	S	Lm	Oa Sa
Hibiscus heterophyllus	Native Rosella	S/T	Lm	Us Sa
Hibiscus geranioides (-)		S	Lm	Oa
Melastomaceae				
Melastoma affine	Pink Lasiandra	S	Lm	Us Sa Oa
Meliaceae				
Turraea pubescens (brownii)	Native Witch-Hazel	S/T	Lm	Us Sa
Menispermaceae				
Pleogyne australis	Pleogyne	V	Lm	Us Sa
Mimosaceae				
Acacia complanata	Flat-stem Wattle	S		Oa Pf
Acacia hubbardiana	Yellow Prickly Moses	S		Oa Pf
Acacia irrorata	Blue Skin	S		Oa Pf
Acacia myrtifolia	Myrtle Wattle	S		Oa Pf
Acacia suaveolens	Sweet Wattle	S		Oa Pf
Acacia ulicifolia	Prickly Moses	S		Oa Pf
Archidendron lovelliae (-)	Baconwood	S/T	Lm	Us Sa
Monimiaceae				
Wilkiea huegeliana	Tetra Beech	S/T	Lm	Us Sa
Wilkiea macrophylla	Large-leaf Wilkiea	S/T	Lm	Us Sa
Myoporaceae				
Eremophila debilis	Winter Apple	S Gc	Lm	Os
Myoporum boninense (*M. ellipticum*)	Boobialla	S Gc	Lm	Os
Myoporum montanum	Mountain Boobialla	S	Lm	Os
Myrsinaceae				
Aegiceras corniculatum	Milky Mangrove	S/T	Lm St	Oa Coastal
Rapanea howittiana	Scrub Muttonwood	S/T	Lm	Us Sa
Rapanea subsessilis	Red Muttonwood	S/T	Lm	Us Sa
Myrtaceae				
Archirhodomyrtus beckleri (-)	Rose Myrtle	S	Lm	Us Sa
Austromyrtus fragrantissima (-)	Sweet Myrtle	T	Lm	Us Sa
Austromyrtus hillii	Scaly Myrtle	S/T	Lm	Us Sa
Austromyrtus inophloia	Thread-bark Myrtle	S/T	Lm	Us Sa
Austromyrtus aff. lasioclada (-)	Velvet Myrtle	T	Lm	Us Sa
Austromyrtus metrosideros (-)		S	Lm	Us Sa
Pilidiostigma glabrum (-)	Plum Myrtle	S	Lm	Us Sa
Pilidiostigma rhytisperma	Small-leaf Plum Myrtle	S	Lm	Us Sa
Rhodamnia acuminata (-)	Cooloola Ironwood	S	Lm	Us Sa

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Scientific Name	Common Name	Form	Fire Retardance	Comments
Rhodamnia dumicola	Rib-fruit Malletwood	S/T	Lm	Us Sa
Rhodamnia maidenii (-)	Smooth Scrub Turpentine	S	Lm	Us Sa
Rhodomyrtus psidioides	Native Guava	S	Lm	Us Sa
Syzygium wilsoni (-)	Powder-puff Lilly Pilly	S	Lm	Us Sa
Nyctaginaceae				
Pisonia aculeata	Native Bougainvillia	V	Lm	Us Sa
Oleaceae				
Jasminum simplicifolium	Slender Jasmine	V	Lm	Us Sa
Notelaea ovata	Netted Mock Olive	S	Lm	Us Sa
Notelaea venosa	Veined Mock Olive	S	Lm	Us Sa
Passifloraceae				
Passiflora aurantia	Red Passion Flower	V	Lm	Us Oa Sa
Passiflora herbertiana	Yellow Passion Flower	V	Lm	Us Oa Sa
Peperomiaceae				
Peperomia blanda (leptostachya)	Native Peperomia	H	Lm	Us Sa
Peperomia tetraphylla	Native Peperomia	H	Lm	Us Sa
Pittosporaceae				
Citriobatus linearis	Black-fruit Thornbush	S	Lm	Us Sa
Citriobatus paucifloris	Orange Thornbush	S	Lm	Us Sa
Pittosporum revolutum	Brisbane Laurel	S	Lm	Us/Wb Sa/Oa
Proteaceae				
Banksia oblongifolia	Dwarf Banksia	S		Oa Pf
Banksia robur	Swamp Banksia	S		Oa Pf
Grevillea leiophylla	Wallum Grevillea	S		Oa Pf
Grevillea 'Robyn Gordon'	G. 'Robyn Gordon'	S		Oa Pf
Grevillea sericea	Pink Spider Flower	S		Oa Pf
Grevillea 'Shirley Howie'	G. 'Shirley Howie'	S		Oa Pf
Grevillea 'Superb'	G. 'Superb'	S		Oa Pf
Hakea florulenta	Hakea	S		Oa Pf
Hakea purpurea	Purple Hakea	S		Oa Pf
Lambertia formosa (-)	Mountain Devil	S		Oa Pf
Lomatia silaifolia	Crinkle Bush	S		Oa Pf
Stenocarpus angusifolia (-)		S		Oa Pf
Rhizophoraceae				
Bruguiera gymnorrhiza	Orange Mangrove	S/T	Lm St	Oa Coastal
Ceriops tagal	Yellow Mangrove	S/T	Lm St	Oa Coastal
Rhizophora stylosa	Stilted Mangrove	S/T	Lm St	Oa Coastal
Rosaceae				
Rubus parvifolia	Pink Raspberry	S	Lm	Oa
Rubus rosifolius	Native Raspberry	S	Lm	Us Sa
Rubiaceae				
Canthium coprosmoides	Coast Canthium	S/T	Lm	Us Oa Sa
Canthium lamprophyllum	Large-leaf Canthium	S/T	Lm	Us Sa

Scientific Name	Common Name	Form	Fire Retardance	Comments
Canthium microphyllum	Small-leaf Canthium	S	Lm	Us Sa
Ixora bleckleri	Brown Coffeewood	S/T	Lm	Us Sa
Morinda acutifolia	Veiny Morinda	V	Lm	Us Sa
Morinda jasminoides	Sweet Morinda	V	Lm	Us Sa
Pavetta australiensis	Pavetta	S	Lm	Us Sa
Psychotria daphnoides	Smooth Psychotria	S	Lm	Us Sa
Psychotria loniceroides	Hairy Psychotria	S	Lm	Us Sa
Psychotria simmondsiana	Small Psychotria	S	Lm	Us Sa
Randia benthamiana	Native Gardenia	S	Lm	Us Sa
Randia chartacea	Narrow-leaf Gardenia	S	Lm	Us Sa
Rutaceae				
Clausena brevistyla (-)	Clausena	S	Lm	Us Sa
Microcitrus australasica (-)	Finger Lime	S	Lm	Us Sa
Murraya ovatifoliolata (-)	Native Murraya	S/T	Lm	Us Sa
Phebalium woombye (-)	Phebalium	S	Lm	Oa
Sambucaceae				
Sambucus australasica	Yellow Elderberry	S	Lm	Us Sa
Sapindaceae				
Alectryon coriaceus (-)	Beach Bird's Eye	S/T	Lm	Wb Oa
Arytera microphylla (-)	Dwarf Coogara	S	Lm	Us Sa
Cupaniopsis newmanii (-)	Long-leaf Tuckeroo	T	Lm	Us Sa Oa
Cupaniopsis serrata	Rusty Tuckeroo	S/T	Lm	Us Sa Oa
Cupaniopsis wadsworthii (-)	Dwarf Tuckeroo	S	Lm	Us Sa
Harpullia alata (-)	Wing-leaf Tulip	S	Lm	Us Sa
Mischocarpus sundaicus	Red Pear-fruit	T	Lm	Us Sa
Sapotaceae				
Planchonella myrsinoides	Yellow Plumwood	S/T	Lm	Us Sa
Scrophulariaceae				
Artenema fimbriatum	Koala bells	H	Lm	Oa
Tetragoniaceae				
Tetragonia tetragonioides	Native Spinach	H Gc	St Sc	Oa
Solanaceae				
Duboisia myoporoides	Corkwood	S/T	Lm	Us Sa
Solanum aviculare	Kangaroo Apple	S	Lm	Us Sa Oa
Solanum densevestitum (-)	Furry Nightshade	S	Lm	Us Sa
Solanum stelligerum (-)	Star Nightshade	S	Lm	Us Sa
Sterculiaceae				
Brachychiton bidwillii	Little Kurrajong	S	Lm	Us Sa Oa
Commersonia fraserii	Scrub Kurrajong	S	Lm	Us Sa Oa
Symplocaceae				
Symplocus baeuerlenii (-)	Shrubby Hazelwood	S	Lm	Us Sa

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Scientific Name	Common Name	Form	Fire Retardance	Comments
Thymeliaceae				
Phaleria clerodendron (-)		S	Lm	Us Sa
Phaleria chermsideana	Scrub Daphne	S/T	Lm	Us Sa
Pimelea linifolia	Slender Rice Flower	S		Oa
Wikstroemia indica	Tie Bush	S	Lm	Us Oa Sa
Tiliaceae				
Corchorus cunninghamii	Corchorus	S	Lm	Us Sa
Urticaceae				
Elatostema reticulatum	Rainforest Spinach	H	Lm	Us Sa
Elatostema stipitatum (-)	Small Soft Nettle	H	Lm	Us Sa
Pipturus argenteus	Native Mulberry	S/T	Lm	Us Sa
Verbenaceae				
Callicarpa pedunculata	Velvet-leaf	S	Lm	Us Sa
Clerodendrum floribundum	Lolly Bush	S/T	Lm	Us Oa Sa
Clerodendrum tomentosum	Hairy Lolly Bush	S/T	Lm	Us Oa Sa
Phyla nodiflora (-)	Condamine Couch	H Gc	Lm	Oa
Vitex ovata (-)	Vitex	S Gc	Lm	Oa
Violaceae				
Viola betonicifolia	Purple Violet	H	Lm	Us Sa
Viola hederacea	Native Violet	H	Lm	Us Sa
Vitaceae				
Cayratia acris	Hairy Water Vine	V	Lm	Us Sa
Cayratia clematidea	Slender Grape	V	Lm	Us Oa Sa
Cayratia eurynema	Soft Water Vine	V	Lm	Us Sa
Cissus opaca	Small-leaf Water Vine	V	Lm	Us Oa Sa
Winteraceae				
Tasmannia insipida	Pepper Bush	S	Lm	Us Sa
PTERIDOPHYTES				
Aspleniaceae				
Asplenium attenuatum	A Spleenwort	F	Lm	Sa
Asplenium australasicum	Crow's Nest Fern	eF	Lm	Sa
Osmondaceae				
Todea barbara	King Fern	tF	Lm	Us Sa
Polypodiaceae				
Drynaria rigidula	Basket Fern	eF	Lm	Sa
Phymatodes scandens	Scented Climbing Fern	tF	Lm	Sa
Platycerium bifurcatum	Elkhorn	eF	Lm	Sa
Platycerium superbum	Staghorn	F	Lm	Sa
Pyrrosia confluens	Felt Fern	eF	Lm	Sa
Pyrrosia rupestris	Rock Felt Fern	eF	Lm	Sa

Fire-Retardant Plants for Medium Gardens

The following plants can be used in addition to the list of plants for small gardens.

Scientific Name	Common Name	Form	Fire Retardance	Comments
MONOCOTYLEDONS				
Arecaceae				
Archontophoenix cunninghamii	Picabeen Palm	P	Lm	Ad
Calamus muelleri	Lawyer Cane Vine	P	Lm	Ad
Livistona australis	Cabbage Palm	P	Lm	Ad
Smilacaceae				
Ripogonum fawcettianum	Small Supplejack	V	Lm	Sa
Smilax australis	Barb-wire Vine	V	Lm	Sa Oa
DICOTYLEDONS				
Akaniaceae				
Akania lucens	Turnipwood	T	Lm	Us
Alangiaceae				
Alangium villosum polyosmoides	Muskwood	T	Lm	Us
Alangium villosum tomentosum	Muskwood	T	Lm	Us
Annonaceae				
Polyalthia nitidissima	Canary Beech	T	Lm	Us
Apocynaceae				
Alstonia constricta	Quinine Tree	T	Lm	Us
Melodinus acutiflorus	Merangarra	V	Lm	Sa
Melodinus australis	Southern Melodinus	V	Lm	Sa
Araliaceae				
Cephalaralia cephalobotrys	Climbing Panax	V	Lm	Sa
Bignoniaceae				
Pandorea pandorana	Wonga Vine	V	Lm	Oa Sa
Caesalpiniaceae				
Barklya syringifolia	Crown of Gold Tree	T	Lm	Us Sa Oa
Cassia tomentella (-)	Velvet Bean	S/T	Lm	Us Oa
Cunoniaceae				
Callicoma serratifolia (-)	White Alder	S/T	Lm	Us
Dilleniaceae				
Tecomanthe hillii (-)	Fraser Island Climber	V	Lm	Sa

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Scientific Name	Common Name	Form	Fire Retardance	Comments
Ebenaceae				
Diospyros australis	Black Plum	T	Lm	Us/Wb
Diospyros geminata	Scaly Ebony	T	Lm	Us/Wb
Diospyros mabacea (-)	Red-fruited Ebony	T	Lm	Us
Escalloniaceae				
Anopterus macleayanus (-)	Queensland Laurel	T	Lm	Us
Polyalthia nitidissima	Canary Beech	T	Lm	Us
Euphorbiaceae				
Claoxylon australe	Brittlewood	S/T	Lm	Us
Croton achronychioides	Thick-leaved Croton	S/T	Lm	Us
Croton insularis	Queensland Cascarilla	S/T	Lm	Us
Croton stigmatosus	White Croton	T	Lm	Us
Fabaceae				
Erythrina vespertilio	Bat's Wing Coral Tree	T	Lm	Ad De
Hernandiaceae				
Hernandia bivalvis	Cudgerie	T	Lm	Wb
Lauraceae				
Cryptocarya bidwilli	Yellow Laurel	T	Lm	Wb
Cryptocarya meisneriana	Thick-leaf Laurel	T	Lm	Wb
Cryptocarya sclerophylla	Boonah Laurel	T	Lm	Wb
Cryptocarya triplinervis	Brown Laurel	T	Lm	Wb
Cryptocarya triplinervis var. pubens	Hairy Brown Laurel	T	Lm	Wb
Meliaceae				
Owenia venosa	Crow's Apple	T	Lm	Us/Wb
Synoum glandulosum	Scentless Rosewood	S/T	Lm	Us
Turraea pubescens (*T. brownii*)	Native Witch-Hazel	T	Lm	Us
Menispermaceae				
Stephania japonica var. discolor	Tape Vine	V	Lm	Sa Oa
Mimosaceae				
Acacia aulacocarpa	Hickory Wattle	T	Lm	Wb/Pf
Acacia implexa	Light Wood	T	Lm	Wb/Pf
Acacia melanoxylon	Blackwood	T	Lm	Wb/Pf
Acacia cincinnata	Wattle	S/T	Lm	Wb/Pf
Pararchidendron pruinosum	Snowwood	T	Lm	Us/Wb
Moraceae				
Ficus coronata	Creek Sandpaper Fig	T	Lm	Us/Wb
Ficus fraseri	A Sandpaper Fig	T	Lm	Us/Wb
Ficus opposita	A Sandpaper Fig	T	Lm	Us/Wb
Streblus brunonianus (*S. pendulinus*)	Whalebone Tree	T	Lm	Us/Wb

Scientific Name	Common Name	Form	Fire Retardance	Comments
Myoporaceae				
Myoporum acuminatum	Coast Boobialla	S/T	Lm	Wb Oa
Myrsinaceae				
Rapanea variabilis	Muttonwood	T	Lm	Us
Myrtaceae				
Acmena smithii (*small varieties*)	Creek Lilly Pilly	T	Lm	Us/Wb
Decaspermum humile	Silky Myrtle	S/T	Lm	Us
Metrosideros queenslandica (-)	Pink Myrtle	T	Lm	Us
Rhodamnia rubescens	Brown Malletwood	T	Lm	Us/Wb
Syzygium hodgkinsonia (-)	Smooth-bark Rose Apple	T	Lm	Us
Oleaceae				
Notelaea johnsonii	Veinless Mock Olive	S/T	Lm	Us
Notelaea longifolia	Large Mock Olive	S/T	Lm	Us/Wb
Notelaea microcarpa	Velvet Mock Olive	S/T	Lm	Us/Wb
Pittosporaceae				
Hymenosporum flavum	Native Frangipani	T	Lm	Us Ad
Pittosporum undulatum	Mock Orange	T	Lm	Us/Wb
Proteaceae				
Buckinghamia celsissima (-)	Ivory Curl Flower	T	Lm	Wb
Grevillea helmsiae (-)		T	Lm	Us Pf
Hicksbeachia pinnatifolia (-)	Red Boppel Nut	T	Lm	Us Ad Pf
Lomatia arborescens (-)	Tree Lomatia	S/T	Lm	Us Pf
Macadamia integrifolia	Queensland Nut	T	Lm	Wb
Macadamia ternifolia	Maroochy Nut	T	Lm	Wb
Macadamia tetraphylla	Rough Shell Bush Nut	T	Lm	Wb
Triunia youngiana	Spice Bush	T	Lm	Us
Rubiaceae				
Coelospermum paniculatum	Coelospermum	V	Lm	Sa
Hodgkinsonia ovatiflora	Golden Ash	T	Lm	Us/Wb
Ranunculaceae				
Clematis glycinoides	Headache Vine	V	Lm	Sa
Rutaceae				
Acronychia imperforata	Coast Aspen	S/T	Lm	Us/Wb
Acronychia pauciflora	Soft Acronychia	S/T	Lm	Us
Microcitrus australis	Round Lime	S	Lm	Us
Sapindaceae				
Alectryon connatus	Alectryon	T	Lm	Wb Slow at first
Alectryon subcinereus	Wild Quince	T	Lm	Wb
Alectryon subdentalus	Holly-leaf Bird's Eye	T	Lm	Wb
Alectryon tomentosus	Hairy Bird's Eye	T	Lm	Wb
Arytera distylis	Twin-leaf Coogera	T	Lm	Wb

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Scientific Name	Common Name	Form	Fire Retardance	Comments
Arytera divaricata	Rose Tamarind	T	Lm	Wb
Arytera foveolata	Pitted Coogera	T	Lm	Wb
Cupaniopsis parvifolia	Small-leaf Tuckeroo	T	Lm	Wb
Cupaniopsis shirleyana (-)	Wedge-leaf Tuckeroo	T	Lm	Us/Wb
Cupaniopsis tomentella (-)	Boonah Tuckeroo	T	Lm	Wb
Elattostachys nervosa	Beetroot	T	Lm	Us/Wb
Elattostachys xylocarpa	White Tamarind	T	Lm	Wb
Guioa semiglauca	Wild Quince	T	Lm	Wb
Lepiderema pulchella (-)	Fine-leaf Tuckeroo	T	Lm	Wb
Mischocarpus australis	Red Pear-fruit	T	Lm	Wb
Toechima tenax	Scrub Teak	T	Lm	Wb
Sapotaceae				
Planchonella chartacea	Thin-leaf Plum	S/T	Lm	Us Sa
Planchonella cotinifolia	Small-leaf Plum	S/T	Lm	Us Sa
Simaroubaceae				
Guilfoylia monostylis	Native Plum	T	Lm	Us
Symplocaceae				
Symplocus thwaitesii	Buff Hazelwood	S/T	Lm	Us
PTERIDOPHYTES				
Cyatheaceae				
Cyathea australis	Rough Tree Fern	tF	Lm	Us
Cyathea cooperi	CommonTree Fern	tF	Lm	Us
Cyathea leichhardtiana	Prickly Tree Fern	tF	Lm	Us

Fire-Retardant Plants for Large Gardens, Acreage Blocks, Parks and Farms

The following plants can be used in addition to the lists of plants for small and medium gardens.

Scientific Name	Common Name	Form	Fire Retardance	Comments
GYMNOSPERMS				
Araucariaceae				
Agathis robusta (-)	Qld Kauri	T	Lm	Pf - resin
Araucaria bidwillii (-)	Bunya Pine	T	Lm	Pf - resin
Araucaria cunninghamii	Hoop Pine	T	Lm	Pf - resin
Podocarpaceae				
Podocarpus elatus	Brown or Plum Pine	T	Lm	Pf - resin
MONOCOTYLEDONS				
Arecaceae (Palmae)				
Calamus muelleri	Lawyer Cane Vine	V	Lm	Sa Oa
Flagellariaceae				
Flagellaria indica	Supplejack	V	Lm	Sa
Pandanaceae				
Freycinettia excelsa	Climbing Pandanus	V	Lm	Sa
Freycinettia scandens	Climbing Pandanus	V	Lm	Sa
Smilacaceae				
Ripogonum album	White Supplejack	V	Lm	Sa
Ripogonum brevifolium	Supplejack	V	Lm	Sa
Ripogonum discolor	Prickly Supplejack	V	Lm	Sa
Ripogonum elseyanum	Hairy Supplejack	V	Lm	Sa
DICOTYLEDONS				
Anacardiaceae				
Euroschinus falcata	Ribbonwood	T	Lm	Wb
Rhodosphaera rhodanthema	Deep Yellowwood	T	Lm	Wb
Annonaceae				
Melodorum leichhardtii (*Rauwenhoffia l.*)	Zig-Zag Vine	V	Lm	Sa
Apocynaceae				
Alstonia constricta	Quinine Tree	T	Lm	Wb
Melodinus acutiflorus	Merangarra	V	Lm	Sa
Melodinus australis	Southern Melodinus	V	Lm	Sa
Parsonsia eucalyptophylla	Gargaloo	V	Lm	Sa Oa
Parsonsia fulva	Furry Silkpod	V	Lm	Sa
Parsonsia lanceolata	Northern Silkpod	V	Lm	Sa
Parsonsia latifolia	Monkey Vine	V	Lm	Sa
Parsonsia straminea	Monkey Rope	V	Lm	Sa Oa
Parsonsia velutina	Velvet Silkood	V	Lm	Sa Oa
Parsonsia ventricosa	Pointed Silkpod	V	Lm	Sa
Arecaceae				
Calamus muelleri	Lawyer Cane	V	Lm	Sa
Araliaceae				
Cephalaralia cephalobotrys	Climbing Panax	V	Lm	Sa
Polyscias elegans	Celerywood	T	Lm	Wb/Ad Oa Sa
Polyscias murrayi	Pencil Cedar	T	Lm	Ad Oa Sa
Asclepiadaceae				
Marsdenia rostrata	Common Milk Vine	V	Lm	Sa
Atherospermataceae				
Daphnandra micrantha	Socketwood	T	Lm	Wb

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Scientific Name	Common Name	Form	Fire Retardance	Comments
Avicenniaceae				
Avicennia marina	Grey Mangrove	T	Lm St	Oa Coastal
Burseraceae				
Canarium australasicum	Carrotwood	T	Lm	Wb
Caesalpiniaceae				
Cassia marksiana (-)	Native Laburnum	T	Lm	Wb
Caesalpinia bonduc	Caesalpinia	V	Lm	Sa
Caesalpinia scortechinii	Large Prickle Vine	V	Lm	Sa
Caesalpinia subtropica	Corky Prickle Vine	V	Lm	Sa
Celastraceae				
Celastrus australis	Staff Climber	V	Lm	Sa
Celastrus subspicatus	Large Staff Vine	V	Lm	Sa
Loeseneriella barbata (*Hippocratea b.*)	Knot Vine	V	Lm	Sa
Cunoniaceae				
Caldcluvia paniculosa	Rose-leaf Marara	T	Lm	Wb
Ceratopetalum apetalum (-)	Coachwood	T	Lm	Wb
Geissois benthamii	Red Carabeen	T	Lm	Wb
Pseudoweinmannia lachnocarpa	Marara	T	Lm	Wb
Schizomeria ovata	White Birch	T	Lm	Us/Wb
Ebenaceae				
Diospyros fasciculosa	Grey Ebony	T	Lm	Wb
Diospyros pentamera	Myrtle Ebony	T	Lm	Wb
Ehretiaceae				
Cordia dichotoma (-)	Cordia	T	Lm	Wb
Ehretia acuminata	Koda	T	Lm	Ad De
Elaeocarpaceae				
Elaeocarpus eumundi	Eumundi Quandong	T	Lm	Wb
Elaeocarpus grandis	Blue Quandong	T	Lm	Wb
Elaeocarpus kirtonii	White Quandong	T	Lm	Wb
Elaeocarpus obovatus	Hard Quandong	T	Lm	Wb
Sloanea australis	Maiden's Blush	T	Lm	Wb
Sloanea woollsii	Yellow Carabeen	T	Lm	Wb
Escalloniaceae				
Quintinia verdonii	Grey Possumwood	T	Lm	Wb
Euphorbiaceae				
Austrobuxus swainii (-)	Pink Cherry	T	Lm	Wb
Baloghia inophylla (*B. lucida*)	Scrub Bloodwood	T	Lm	Wb
Bridelia exaltata	Scrub Ironbark	T	Lm	Wb
Bridelia leichhardtii	Leichhardt's Ironbark	T	Lm	Wb
Claoxylon australe	Brittlewood	T	Lm	Wb

Scientific Name	Common Name	Form	Fire Retardance	Comments
Dissiliaria baloghioides	Lancewood	T	Lm	Wb
Drypetes australasica	Yellow Tulip	T	Lm	Wb
Exocoecaria agallocha	Milky Mangrove	T	Lm St	Ad Coastal
Exocoecaria dallachyana	Scrub Poison Tree	T	Lm	Wb
Glochidion ferdinandi	Cheese Tree	T	Lm	Wb
Glochidion sumatranum	Buttonwood	T	Lm	Wb
Mallotus discolor	Yellow Kamala	T	Lm	Wb
Mallotus philippensis	Red Kamala	T	Lm	Wb
Fabaceae				
Austrosteenisia blackii	Blood Vine	V	Lm	Sa Oa
Castanospermum australe	Black Bean	T	Lm	Wb
Derris involuta	Native Derris	V	Lm	Sa
Erythrina sp. Lacey's Creek	Corkwood	T	Lm	Ad De
Erythrina vespertilio	Batswing Coral Tree	T	Lm	Ad De
Mucuna gigantea	Burny Bean	V	Lm	Sa
Flacourtiaceae				
Scolopia braunii	Flintwood	T	Lm	Wb
Flindersiaceae				
Flindersia australis	Crows Ash	T	Lm	Wb
Flindersia bennettiana	Bennett's Ash	T	Lm	Wb
Flindersia collina	Leopard Ash	T	Lm	Wb
Flindersia schottiana	Cudgerie or Bumpy Ash	T	Lm	Wb
Flindersia xanthoxyla	Yellowwood	T	Lm	Wb
Icacinaceae				
Citronella moorei	Churnwood	T	Lm	Wb
Pennantia cunninghamii	Brown Beech	T	Lm	Wb
Lauraceae				
Cryptocarya erythroxylon	Pigeonberry Ash	T	Lm	Wb
Cryptocarya hypospodia	Rib-fruit Pepperberry	T	Lm	Wb
Cryptocarya macdonaldii	Cooloola Laurel	T	Lm	Wb
Cryptocarya microneura	Murrogun	T	Lm	Wb
Cryptocarya obovata	Pepperberry Tree	T	Lm	Wb
Endiandra muelleri	Mueller's Walnut	T	Lm	Wb
Endiandra pubens	Hairy Walnut	T	Lm	Wb
Endiandra sieberi (-)	Hard Corkwood	T	Lm	Wb
Neolitsea australiensis	Grey Bolly Gum	T	Lm	Wb
Neolitsea dealbata	White Bolly Gum	T	Lm	Us/Wb
Malvaceae				
Hibiscus tiliaceus	Cotton Tree	T	Lm	Wb
Lagunaria patersonii (-)	Norfolk Is Hibiscus	T	Lm	Wb
Meliaceae				
Anthocarapa nitidula (*Pseudocarapa nitidula*)	Incense Cedar	T	Lm	Wb
Dysoxylum fraseranum	Rosewood	T	Lm	Wb

CITY OF MORETON BAY

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Scientific Name	Common Name	Form	Fire Retardance	Comments
Dysoxylum mollissimum ssp. molle (D. muelleri)	Red Bean	T	Lm	Wb
Dysoxylum rufum	Hairy Rosewood	T	Lm	Wb
Melia azedarach	White Cedar	T	Lm	Wb/Ad De
Owenia cepiodora	Onion Cedar	T	Lm	Wb
Toona australis	Red Cedar	T	Lm	Wb/Ad De
Menispermaceae				
Legnephora moorei	Wild Grape	V	Lm	Sa
Sarcopetalum harveyanum	Pearl Vine	V	Lm	Sa
Stephania aculeata	Prickly Snake Vine	V	Lm	Sa
Tinospora smilacina	Snake Vine	V	Lm	Sa
Tinospora tinosporoides	Arrow-head Vine	V	Lm	Sa
Mimosaceae				
Acacia aulacocarpa var. aulacocarpa	Hickory Wattle	T	Lm	Wb Pf
Acacia bakeri	Marblewood	T	Lm	Wb Pf
Acacia harpophylla (-)	Brigalow Wattle	T	Lm	Wb
Acacia melanoxylon	Blackwood	T	Lm	Wb Pf
Archidendron grandiflorum	Lace Flower	T	Lm	Wb
Monimiaceae				
Palmeria scandens	Anchor Vine	V	Lm	Sa
Moraceae				
Ficus macrophylla	Moreton Bay Fig	T	Lm	Wb
Ficus obliqua	Small-leafed Fig	T	Lm	Wb
Ficus platypoda	Rock Fig	T	Lm	Wb
Ficus superba var. henneana	Deciduous Fig	T	Lm	Ad De
Ficus virens var. sublanceolata	White Fig	T	Lm	Wb
Ficus watkinsiana	Nipple Fig	T	Lm	Wb
Maclura cochinchinensis (Cudrania c.)	Cockspur Thorn	V	Lm	Oa Sa
Malaisia scandens	Burny Vine	V	Lm	Sa
Myrtaceae				
Acmena hemilampra	Blush Satinash	V	Lm	Wb
Acmena ingens (A. brachyandra)	Red Apple	V	Lm	Wb
Acmena smithii	Creek Lilly Pilly	T	Lm	Wb
Lophostemon confertus	Brush Box	T	Lm	Wb
Syncarpia glomulifera	Turpentine	T	Lm	Wb
Syzygium australe	Scrub Cherry	T	Lm	Wb
Syzygium corynanthum	Sour cherry	T	Lm	Wb
Syzygium crebrinerve	Purple Cherry	T	Lm	Wb
Syzygium moorei (-)	Durobby	T	Lm	Wb
Nyctaginaceae				
Pisonia aculeata	Native Bougainvillea	V	Lm	Sa

Scientific Name	Common Name	Form	Fire Retardance	Comments
Oleaceae				
Olea paniculata	Native Olive	T	Lm	Wb
Piperaceae				
Piper novae-hollandiae	Native Pepper Vine	V	Lm	Sa
Pittosporaceae				
Pittosporum rhombifolium	Hollywood	T	Lm	Wb
Proteaceae				
Floydia praealta	Ball Nut	T	Lm	Wb
Grevillea hilliana (-)	Hill's Silky Oak	T	Lm	Pf
Grevillea robusta	Silky Oak	T	Lm	Pf
Helicia glabriflora	Smooth Helicia	T	Lm	Pf
Macadamia integrifolia	Queensland Nut	T	Lm	Wb
Macadamia ternifolia	Maroochy Nut	T	Lm	Wb
Macadamia tetraphylla (-)	Rough-shell Bush Nut	T	Lm	Wb
Oriocallis pinnata (-)	Pink Silky Oak	T	Lm	Pf
Oriocallis wickhamii (-) *(Alloxylon flammeum)*	Satin Oak	T	Lm	Pf
Stenocarpus salignus (-)	Scrub Beefwood	T	Lm	Pf
Stenocarpus sinuatus	Wheel of Fire Tree	T	Lm	Wb
Ranunculaceae				
Clematis aristata	Old Man's Beard	V	Lm	Sa
Rhamnaceae				
Alphitonia excelsa	Red Ash	T	Lm	Wb
Alphitonia petrei	Pink Ash	T	Lm	Wb
Emmenosperma alphitonioides	Yellow Ash	T	Lm	Wb
Rosaceae				
Rubus moluccanus	MoluccaBramble	V	Lm	Sa
Rutaceae				
Acronychia oblongifolia	White Lilly Pilly	S/T	Lm	Wb
Acronychia suberosa	Corky Acronychia	T	Lm	Wb
Sarcomelicope simplicifolia	Bauerella	T	Lm	Wb
Sapindaceae				
Alectryon reticulatus	Alectryon	T	Lm	Wb
Arytera lautererana	Corduroy Tamarind	T	Lm	Wb
Atalaya multiflora	Broad-leaf Whitewood	T	Lm	Wb
Atalaya salicifolia (*A. virens*)	Scrub Whitewood	T	Lm	Wb
Castanospora aphanandi (-)	Brown Tamarind	T	Lm	Wb
Cupaniopsis anacardioides	Tuckeroo	T	Lm	Wb
Cupaniopsis flagelliformis (-)	Brown Tuckeroo	S/T	Lm	Wb
Diploglottis campbellii (-)	Small-leaf Tamarind	T	Lm	Wb
Diploglottis cunninghamii	Native Tamarind	T	Lm	Wb/Ad
Harpullia hillii	Blunt-leaf Tulip	T	Lm	Wb
Harpullia pendula	Tulipwood	T	Lm	Wb

Scientific Name	Common Name	Form	Fire Retardance	Comments
Jagera pseudorhus	Foam Bark Tree	T	Lm	Wb
Mischocarpus anodontus	Veiny Pear-fruit	T	Lm	Wb
Mischocarpus pyriformis	Yellow Pear-fruit	T	Lm	Wb
Rhysotoechia bifoliolata (-)	Twin-leaf Tuckeroo	T	Lm	Wb
Sarcopteryx stipata	Corduroy	T	Lm	Wb
Toechima dasyrrhache	Blunt-leaf Steelwood	T	Lm	Wb
Sapotaceae				
Amorphospermum antilogum	Brown Pearwood	T	Lm	Wb
Amorphospermum whitei (-)	Rusty Plum	T	Lm	Wb
Planchonella australis	Black Apple	T	Lm	Wb
Planchonella laurifolia (-)	Blush Coondoo	T	Lm	Wb
Planchonella pohlmaniana	Yellow Boxwood	T	Lm	Wb
Simaroubaceae				
Ailanthus triphysa	White Siris	T	Lm	Wb
Guilfoylia monostylis	Native Plum	T	Lm	Wb
Siphonodontaceae				
Siphonodon australis	Ivorywood	T	Lm	Wb
Sterculiaceae				
Argyrodendron actinophyllum	Black Booyong	T	Lm	Wb
Argyrodendron trifoliolatum	Brown Tulip Oak	T	Lm	Wb
Brachychiton acerifolius	Flame Tree	T	Lm	Ad De
Brachychiton discolor	Lace Bark	T	Lm	Ad De
Brachychiton populneus	Kurrajong	T	Lm	Wb
Brachychiton rupestris (-)	Qld Bottletree	T	Lm	Ad De
Brachychiton sp. (-)	Ormeau Bottletree	T	Lm	Ad De
Commersonia bartramia	Brown Kurrajong	T	Lm	Us/Wb
Sterculia quadrifida	Peanut Tree	T	Lm	Ad De
Symplocaceae				
Symplocos stawelli	White Hazelwood	T	Lm	Wb
Ulmaceae				
Aphananthe philippinensis	Native Elm	T	Lm	Wb
Celtis paniculata	Investigator Tree	T	Lm	Wb
Urticaceae				
Dendrocnide excelsa	Giant Stinging Tree	T	Lm	Wb
Dendrocnide photinophylla	Mulberry Stinger	T	Lm	Wb
Verbenaceae				
Gmelina leichhardtii	White Beech	T	Lm	Wb
Premna lignum-vitae	Lignum-vitae	T	Lm	Wb
Vitaceae				
Cissus antarctica	Kangaroo Vine	V	Lm	Wb
Cissus hypoglauca	Five-leaf Watervine	V	Lm	Wb
Cissus sterculiifolia	Long-leaf Watervine	V	Lm	Wb
Tetrastigma nitens	Shining Grape	V	Lm	Wb

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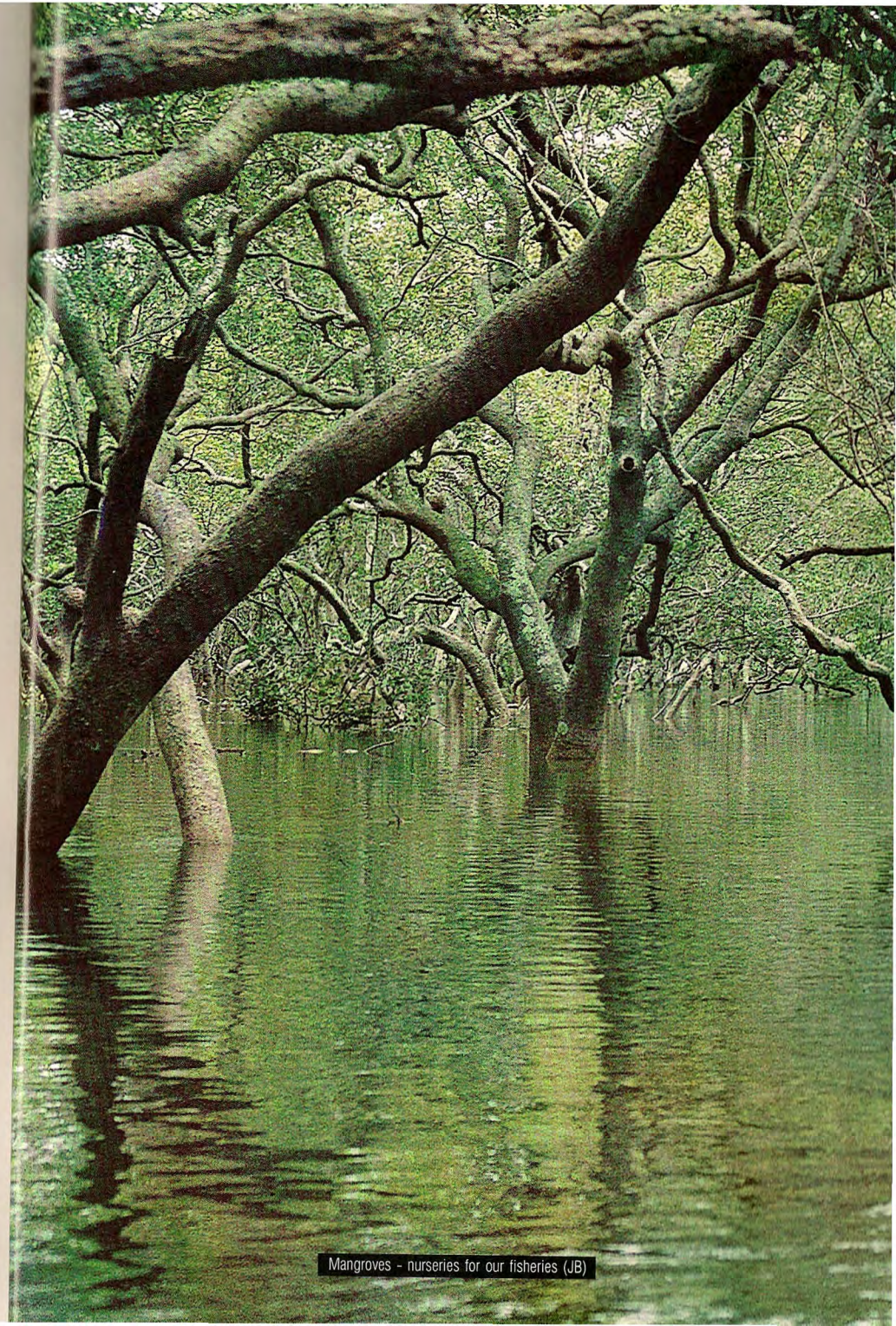

Mangroves - nurseries for our fisheries (JB)

Appendix 2

Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots

Source: Queensland Fire and Emergency Services (2015)

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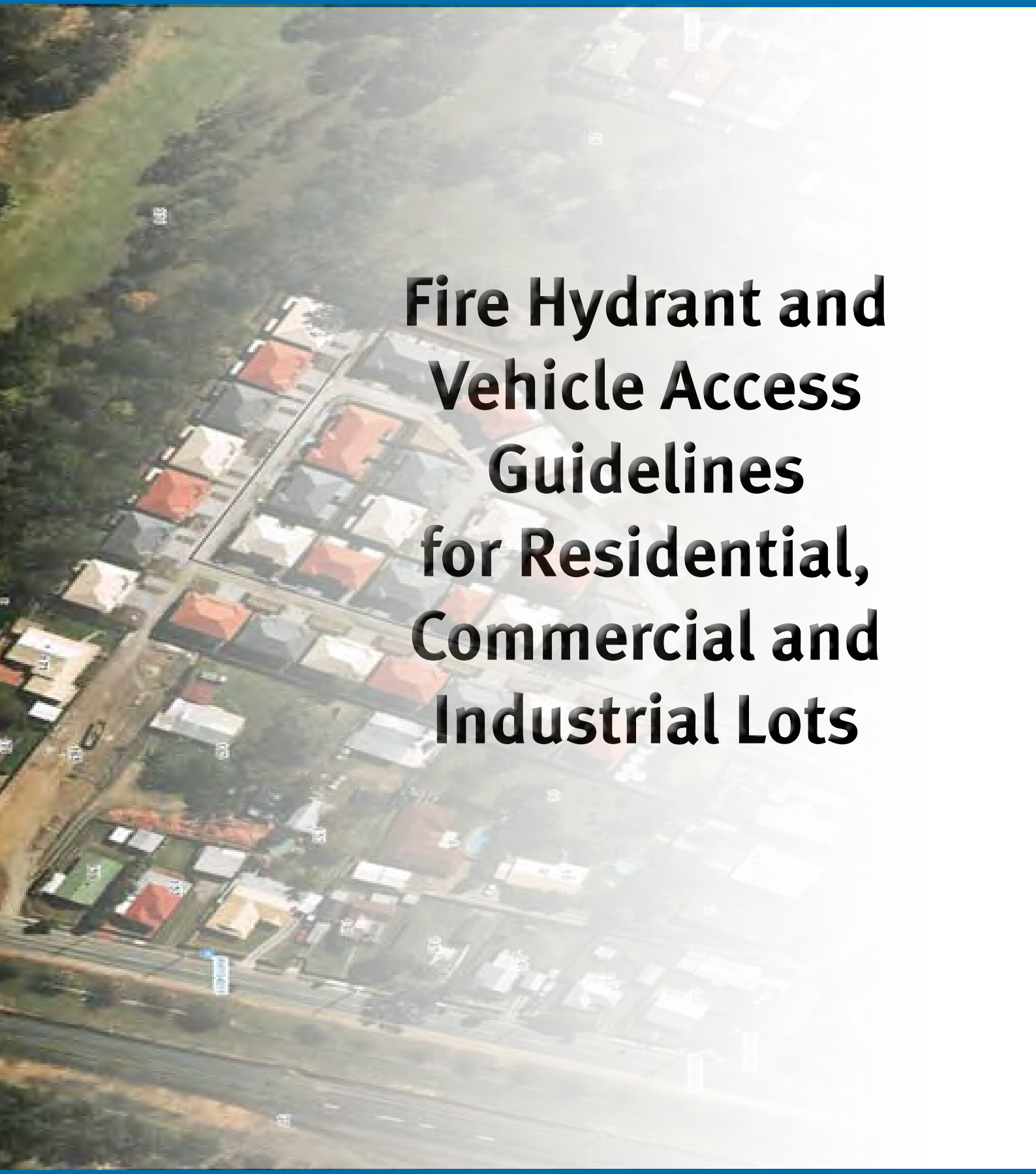

Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots

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Glossary of Terms

In this document, the terms are limited to the meanings described below.

Building:	A building is a fixed structure that is wholly or partly enclosed by walls or is roofed.
Structure:	For this document refer to definition of a Building.
Fire Appliance:	A vehicle used to combat a fire. A typical fire appliance (a pumper) is approximately 2.5m wide, 7.7m long and it is typically used in urban residential areas. Further specifications of fire appliances and larger appliances are available from the QFES if design solutions are required for specific situations.
Hydrant:	An assembly installed on a branch from a water pipeline, which provides a valved outlet to permit a supply of water to be taken from the pipeline for fire fighting. These include above and below ground hydrants.
QFES:	Queensland Fire and Emergency Services.
Material Change of Use:	As per the *Sustainable Planning Act 2009*
Reconfiguration of a Lot:	As per the *Sustainable Planning Act 2009*
Reticulated Water Supply:	Is a permanent infrastructure provided to deliver treated water to lots from an Urban Utility Authority through a system of pipes, mains, control valves etc. for household or industrial use. It will supply uninterrupted water at a positive pressure for fire fighting purposes.
Road or Carriageway:	Construction which is specifically designed for all vehicle travel (may or may not include a sealed top surface layer).
A Constructed Road:	For the purpose of defining widths, includes the part of the road reserve set aside for traffic and also includes roll-over kerbs but does not include the remaining part of the road reserve.
Trafficable Width:	Refers to that width of the constructed road that is unimpeded by encroachments such as street furniture or landscaping, and is available for free movement of fire appliances.

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Public Safety Business Agency working in partnership with the Queensland Fire and Emergency Services.

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1. Scope

For applications seeking development approval for material change of use or reconfiguring a lot for the purpose of building, where streets and common access ways are proposed regardless of building classification.

Where reticulated hydrant systems and vehicle access are not currently required under the *Sustainable Planning Act 2009* (SPA), the *Building Act 1975* or Building Code of Australia (BCA) the measures in this document should be adopted.

Australian Standard (AS) 2419.1 2005 Appendix B is a minimum standard of design and performance for the State of Queensland. In a Local Government Authority where a local Water Authority specifies a design and performance criteria above the requirements of AS 2419.1 2005 Appendix B, the Local Water Authority requirements will be adopted.

For the installed reticulated hydrant systems the minimum water flow rate and pressure is to be 10 L/S @ 200 Kpa as per AS 2419.1 2005 Table 2.2. In a Local Government Authority where a local Water Authority specifies a flow rate and pressure above the requirements of AS 2419.1 2005 Table 2.2, the Local Water Authority requirements will be adopted.

For fire appliance access, a minimum width and height clearance for roadways is required. Constructed roads must comply with Government legislation such as the "Road Planning and Design Manual".

2. Introduction

The Queensland Fire and Emergency Services (QFES) is the primary provider of fire and rescue services throughout Queensland. The QFES is responsible for community safety, the protection of people, property and the environment from fire and chemical incidents and, in conjunction with other agencies, the rescue of people trapped in vehicles, buildings and other emergency situations.

The loss of life and property damage by fire in residential, commercial and industrial premises is a major concern to the QFES, and for this reason, these lot reconfigurations need to be designed to provide ready access for fire appliances, whilst providing a fire fighting water supply from a Hydrant System.

Water supply and access requirements for material change of use or reconfiguring a lot within this document are a planning tool and advice for building and developer applicants, it is not the intent of this document for land development applications to be referred to the QFES. They outline fire safety requirements to enable the QFES to efficiently manage fire incidents.

This document reflects Queensland Government policy of promoting sustainable development that achieves economic, social and environmental objectives, including safety. The provisions are flexible allowing planners and designers to economically achieve safety objectives without compromising aesthetics or amenity.

3. Where Do These Guidelines Apply?

These guidelines apply to all material change of use or reconfiguration of a lot that will include streets and common access ways within a common private title in areas serviced by reticulated water within Queensland, for residential buildings, both attached and detached commercial or industrial buildings that are not covered in other legislation or planning provisions.

For example, this would apply to planned townships or reconfigurations regardless of current fire service intervention.

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4. Water Supply Specification

Installed reticulated hydrant systems are to be located on roadways or access ways for all material change of use and reconfigured lots for fire fighting purposes as per AS 2419.1 2005 Appendix B that provides a minimum standard for hydrant intervals. In a Local Government Authority where a Local Water Authority specifies a design and performance criteria above the requirements of AS 2419.1 2005 Appendix B, the Local Water Authority requirements will be adopted.

For the installed reticulated hydrant systems the minimum water flow rate and pressure is to be 10 L/S @ 200 Kpa as per AS 2419.1 2005 Table 2.2. In a Local Government Authority where a local Water Authority specifies a flow rate and pressure above the requirements of AS 2419.1 2005 Table 2.2, the Local Water Authority requirements will be adopted.

4.1 Hydrant Provision:

Hydrant Provision	
Expectation	**Acceptable Outcomes**
Where reticulated water is available, operable hydrants are to be provided.	Hydrants above or below ground should be provided and maintained to the minimum required performance standard as per AS 2419.1 2005.

Rationale:

Firefighters use water as a prime extinguishing medium for structure fires. Reticulated water mains have hydrants placed at regular intervals to enable firefighters to connect into the reticulated system. The water is pressurised by pumps in the fire appliance and delivered via hoses to the fire.

Figure 1 illustrates hydrant locations on reticulated water mains.

Figure 1 – Reticulated Hydrant System

Figure 2 – Use of Hydrant System

4.2 Hydrant Markers

Hydrant Markers	
Expectation	**Acceptable Outcomes**
Hydrants are suitably identified so that firefighters can locate them at all hours.	Blue cats eyes are preferred for sealed roads. Marker posts at the fence line should be used to identify hydrants where there is an unsealed road as road (HR) or path (HP) hydrants. The Figures 3-6 are examples of marker locations.

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Rationale:

Firefighters need to quickly locate water supplies in emergencies. Hydrant indicators need to be visually identifiable from both directions by the approaching fire appliance crews and must identify the location of the hydrant.

Figure 3 – Hydrant Markers

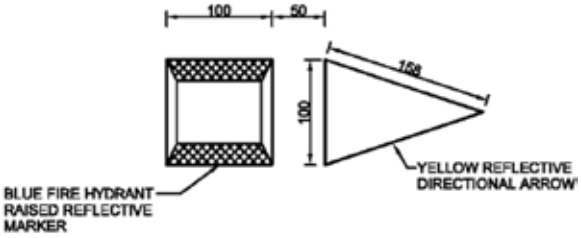
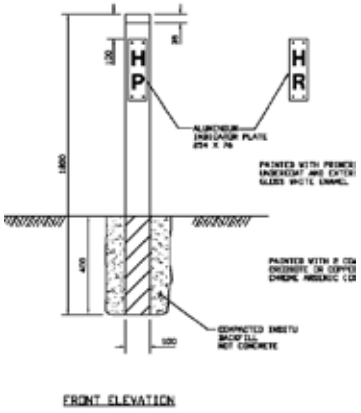


Figure 5 – Marker/directional arrow spacing detail



INDICATOR PLATES

- *254 x 76 aluminium indicator plate.*
- *Fix top and bottom with galvanised clouts.*
- *HP indicates hydrant located in footpath.*
- *HR indicate hyrdant located in road carriageway.*

Figure 4 – Hydrant marker posts

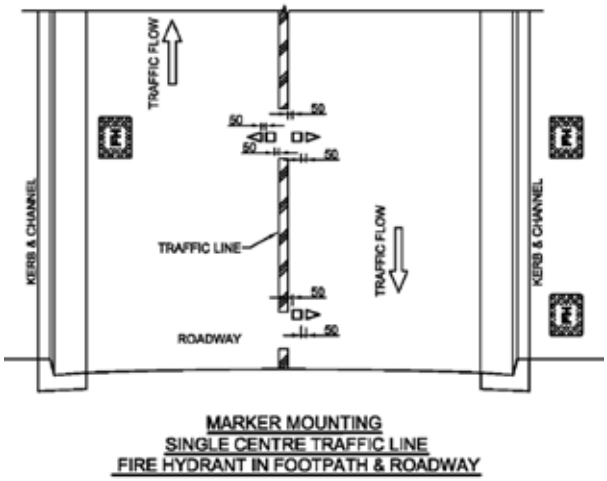


Figure 6 – Location of cats eyes on a sealed roadway

4.3 Hydrant Location

Hydrant Location	
Expectation	**Acceptable Outcomes**
Hydrants are located in positions that will enable firefighters to access water safely, effectively and efficiently.	**Residential Streets and Accessways** Above or below ground fire hydrants should be provided at not more than 120m intervals along residential streets and at each street intersection. Above ground fire hydrants may be single outlet. **Commercial and Industrial Streets and Accessways** Within streets serving commercial properties such as factories, warehouses and offices, above or below ground fire hydrants should be provided at not more than 90 m intervals and at each street intersection. Above ground fire hydrants should have dual valved outlets.

Rationale:

Upon arriving at a structure fire, firefighters site the fire appliance with considerations to safety, access to the fire, other responding appliances and accessible water supply for fire fighting purposes. Firefighters have an expectation that fire hydrants will be located on reticulated water systems no more than 120 metres apart as per AS 2419.1 2005, Appendix B. QFES equipment, procedures and the training of personnel is based on this preferred standard of fire hydrant placement and associated access requirements.

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Note: Hydrants should be located at each intersection. With this in mind hydrant interval distances should not exceed 120 metres.

Figure 6 – Hydrant System design to minimum standards

5. Vehicle Access Requirements

Fire service vehicular access is to enable the service to intervene to fight the fire, assist with evacuation and stop the spread of fire to another building.

A minimum roadway clearance of 3.5m wide by 4.8m high is required for a fire appliance. Constructed roads must comply with Government legislation as specified in the "Road Planning and Design Manual".

5.1 Road Width and Height

Road Width and Height	
Performance Outcomes	**QFES Acceptable Outcomes**
Roads are wide enough for fire appliances to gain access to a safe working area close to dwellings and water supplies whether or not on-street parking spaces are occupied.	Constructed roads must be as specified in the "Road Planning and Design Manual".

Rationale:

Fire appliances often used in residential areas are typically 2.5 m wide and 7.7m long. The road width must allow room for safe passage of a fire appliance with additional margins for human error and safe clearances.

5.2 Road Construction

Road Construction	
Performance Outcomes	**QFES Acceptable Outcomes**
Roads must be constructed to facilitate the safe passage of a laden fire appliance in all weather conditions.	Roads must be constructed to a standard so that they are accessible in all weather conditions and capable of accommodating a vehicle of 15 tonnes for the trafficable road width as specified in the "Road Planning and Design Manual".

Rationale:

Roads must be trafficable in all weather conditions. Most appliances in residential areas currently weigh less than 13 tonnes.

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5.3 Road Grades

Road Grades	
Performance Outcomes	**QFES Acceptable Outcomes**
Grades of roads must facilitate the safe passage of fire appliances.	The average grades, dips, and exit angles must be addressed as specified in the "Road Planning and Design Manual".

Rationale:

Steep slopes affect the free movement of appliances and hinder safe fire fighting. Severe short dips may limit access due to the overhang of the body from the wheels.

5.4 Turning Bays

Turning Bays	
Performance Outcomes	**QFES Acceptable Outcomes**
Provision is made for fire appliances to turn at the end of dead end roads.	Constructed roads more than 60m in length from the nearest intersection must have a turning circle with a minimum radius of 8m (including roll-over kerbs if they are provided). Other solutions using T or Y heads of specified dimensions are also appropriate. See figure 2 in the "Road Planning and Design Manual" .

Rationale:

It is dangerous for emergency vehicles to be required to reverse along roads for excessive distances in urban areas. Turning is normally carried out after the incident is under control when emergency movement is not required. Even then, large appliances reversing in residential areas create safety concerns. Fire appliances occasionally need to seek an alternative route necessitating a 180 degree turn in emergency conditions. Using a three point turn, fire appliances require a turning circle radius of 8m to turn safely. Alternative designs using specified T or Y heads are also appropriate. This area needs to be clear of obstructions.

Turning Examples

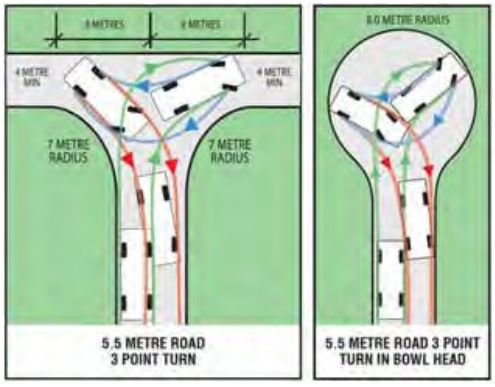

Figure 7 – Vehicle Turning Provisions

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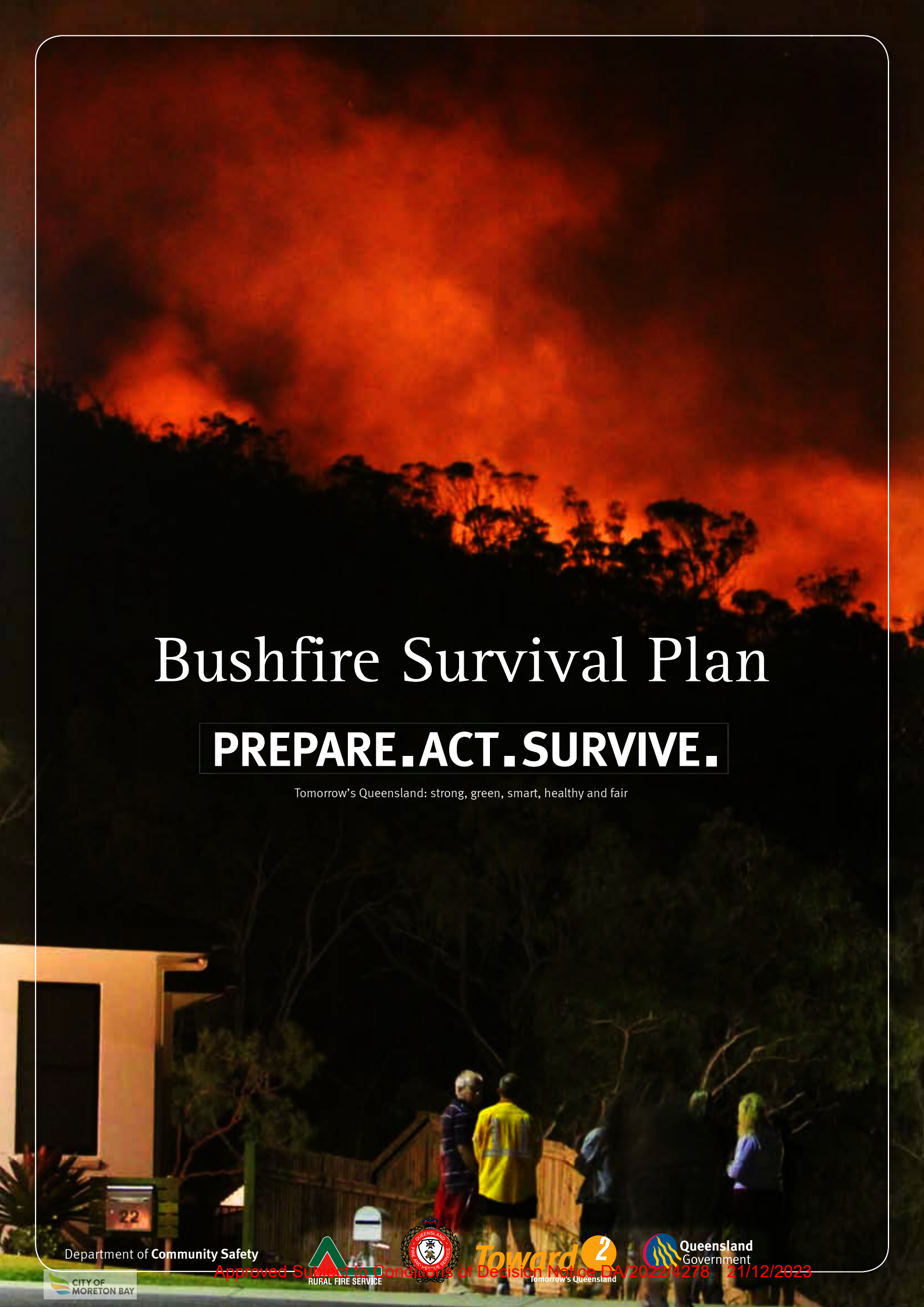
Appendix 3

Bushfire Survival Plan Guideline / Template

Source: Queensland Fire and Emergency Services



Bushfire Survival Plan

PREPARE.ACT.SURVIVE.

Tomorrow's Queensland: strong, green, smart, healthy and fair

Department of **Community Safety**

RURAL FIRE SERVICE

Toward 2 Tomorrow's Queensland

Queensland Government

CITY OF MORETON BAY

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You must PREPARE. ACT. SURVIVE.

Your main priority is to ensure that you and your family are safe. During a bushfire you and your family's survival and safety depend on your preparations, and the decisions you make.

The lives of you and your family are more important than any building.

Whether your plan is to leave early or stay, you must prepare your home and property to increase their level of resilience and your chances of survival.

Bushfires in Queensland

The fire season in Queensland normally commences in the far north of the state in July and progresses through to southern areas as spring approaches. The fire season can extend through to February in southern and far south-western Queensland. These time frames can vary significantly from year to year, depending on the fuel loads, long-term climate and short-term weather conditions in each area.

There are four key considerations for dealing with bushfire:

- The safety of you and your family.
- The resilience of your property.
- The protection of irreplaceable valuables and important documents.
- The maintenance of adequate levels of insurance.

This document will provide you with information about the things you need to consider to prepare yourself and your home for the bushfire season, and how to make your own personal Bushfire Survival Plan.

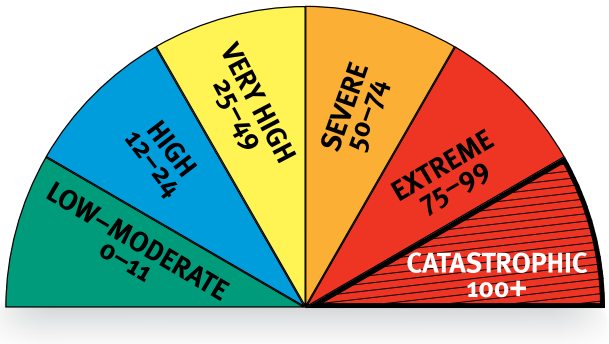
It is your responsibility to prepare yourself, your family and your home for the threat of bushfire.

Understand your risk

The first step in planning to survive a bushfire is to understand your own level of risk. By understanding your own level of risk you will be able to make informed decisions that are right for you and your family. Included with this Bushfire Survival Plan is a self-assessment tool that will enable you to assess the risk level associated with your property. If you are still unsure of your level of risk or require assistance contact your local fire station for more information. To book a Bushfire Safety presentation call 1300 369 003.

Fire danger ratings

The increased frequency of extreme bushfires in Australia in the last 10 years and the recent experience of the Black Saturday fires in Victoria have encouraged fire services throughout Australia to introduce new levels of Fire Danger Rating (FDR). A lift-out chart of the FDR system is contained within this document. Display it in a prominent place in your home or keep it with your Bushfire Survival Plan.



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Catastrophic fire danger rating

The highest level is catastrophic. On a day of catastrophic FDR leaving early is the only option to ensure your survival. You must relocate early to a safer location, hours or the day before a fire occurs. Under no circumstances will it be safe to stay with your property.

Extreme fire danger rating

The second highest level is extreme. Should a fire occur in your area on a day of extreme FDR leaving early will always be the only option. Staying can only be considered for homes that:

- Have been designed and constructed specifically to address the threat of bushfire.
- Have been maintained to those levels and are currently well prepared.
- Can be actively defended by people with the skills, knowledge and confidence to implement a well-rehearsed Bushfire Survival Plan.

On days of catastrophic or extreme FDR:

- Fires are likely to be uncontrollable, unpredictable and very fast moving with highly aggressive flames extending high above tree tops and buildings.
- Thousands of embers may be violently blown into and around homes causing other fires to start rapidly and spread quickly up to 20 kilometres ahead of the main fire.
- Fire can threaten suddenly, without warning, and the heat and wind will make it difficult to see, hear and breathe as the fire approaches.
- People in the path of such fires will almost certainly be injured or die and a significant number of homes and businesses will be destroyed or damaged.
- Even well-prepared and constructed homes will not be safe.
- Expect power, water and phone networks to fail as severe winds bring down trees, power lines and blow roofs off buildings well ahead of the fire.

It is vital that you understand on these days that your survival will depend solely on how well you have prepared and how decisively you act.

Leaving late can be
a deadly option.
If you are in any doubt,
make the decision to
LEAVE EARLY.

What will you do?

At all times you need to **PREPARE.ACT.SURVIVE.**

When the fire danger rating is **'catastrophic'** leaving early is the safest option.

When the fire danger rating is lower than **'catastrophic'**, one of the most important decisions you need to make is whether you will leave early or stay with a well prepared property. This decision is the basis of your Bushfire Survival Plan.

The following questions may help you make the right decision for whether you will leave early or stay:

- Do you need to consider family members who are young, elderly or infirm?
- Are you physically and emotionally prepared to stay with your property?
- Do you have the knowledge, skills, and confidence to stay with your property?
- Is your home adequately constructed, maintained and prepared to withstand the impact of a fire? In other words, is your home prepared to withstand the impact of a bushfire?
- Do you have well-maintained resources and equipment to fight fire, and do you know how to use them?
- Do you have appropriate protective clothing to fight a fire?
- What will you do if a rapid onset fire leaves you with no time to leave? Where will you shelter?

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Leave early

If you plan to leave early then you must leave your home well before a bushfire threatens and travelling by road becomes hazardous. Your leave early preparations include:

Step 1: Preparation – your property should be well prepared for bushfire even if you intend to leave early.

Step 2: What you will do – make your Bushfire Survival Plan in accordance with your decision to leave early.

Step 3: Make a contingency plan – the FDR, the preparedness of your home, a change in household circumstances, a change in your physical preparedness or unexpected visitors are some things that may require you to reconsider your Bushfire Survival Plan.

Planning to stay

Planning is critical to successfully staying with your home may involve the risk of psychological trauma, injury or death.

Step 1: Preparation – your property must be able to withstand the impact of bushfire and well prepared to shelter you and your family.

Step 2: What you will do – make your Bushfire Survival Plan in accordance with your decision to stay.

Step 3: Make a contingency plan – the FDR, the preparedness of your home, a change in household circumstances, a change in your physical preparedness or unexpected visitors are some things that may require you to reconsider your Bushfire Survival Plan.

In making your decision to stay, here are a few things you need to consider.

- Is your property able to withstand the impact of a bushfire?
- Are you physically and emotionally prepared to stay with your property?
- Do you have well-maintained resources and equipment and do you know how to use them?
- Do you have appropriate protective clothing?
- Will your bushfire survival plan need to be different for weekdays, weekends or if someone is sick at home?
- Do you have a contingency plan?

Preparing your Bushfire Survival Plan

Preparation is the key to survival. Being involved in a fire will be one of the most traumatic experiences of your life.

- Prepare yourself – you need to be both mentally and physically prepared to carry out your Bushfire Survival Plan.
- Prepare your Bushfire Survival Plan.
- Prepare your Bushfire Survival Kit.
- Prepare your Bushfire Relocation Kit.
- Prepare your property.

When writing your plan you need to consider:

- Have you made the right choice: to leave early or stay?
- Have you discussed your choice with your family, friends and neighbours?
- Who will take charge and lead other family members by carefully communicating the various tasks set out in the plan?
- If you have chosen to stay what will you do to protect your property when the fire arrives?
- What will you put in your Bushfire Survival Kit and where will you store it?
- Do your friends, family and neighbours know the details of your plan?

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- What will you do if your Bushfire Survival Plan fails?
- Do you have an alternative option or contingency plan if your plan fails?
- Do you have a Neighbourhood Safer Place (NSP) you can go to as a last resort? For more information on NSPs see www.ruralfire.qld.gov.au.
- Is it safe to travel there?

If your decision is to leave early, you must include the following information or action items in your Bushfire Survival Plan:

- Monitor media outlets – radio, TV, mobile phone and internet for bushfire alerts.
- When will you leave?
- What will be your trigger for action?
- Will your plan be different for weekdays, weekends, or if someone is at home sick or injured?
- What will you take with you (Relocation Kit)?
- Where will you and your family go when you leave early?
- What route will you take to get there?
- What will you do with your pets?
- What will you do if there are consecutive or multiple **'catastrophic'** or extreme fire danger days?
- Will you go into work on days when the FDR is in the upper levels?
- Will you send your children to school when the FDR is in the upper levels?
- Will all members of your household leave early?
- What will you do to prepare your property?
- What is your contingency plan in the event that it is unsafe to leave?

If your decision is to stay you must include the following information or actions items in your Bushfire Survival Plan:

- Monitor media outlets – Radio, TV, mobile phone and internet.
- Locate your Bushfire Survival Kit.
- Put on protective clothing.
- Remain hydrated by drinking lots of water.
- Move any stock to fully grazed paddocks.
- Move cars to a safe location.
- Remove garden furniture, doormats and other items.
- Close windows and doors and shut blinds.
- Take down curtains and move furniture away from windows.
- Seal gaps under doors and window screens with wet towels.
- Place pets inside, restrain them, and provide water.
- Block downpipes and fill gutters with water.
- Wet down the sides of buildings facing the approaching fire front.
- Wet down decks and verandas.
- Wet down fine fuels close to buildings.
- Turn on sprinklers in garden before bushfire arrives.
- Fill containers with water; bath, sinks, buckets, wheelie bins, etc.
- Have ladders ready for roof space access (inside) and against roof (outside).
- Have generator or petrol pump ready.
- Start checking and patrolling for embers outside.

When the fire front arrives:

- Take all fire fighting equipment inside such as hoses and pumps as they may melt during the fire.
- Go inside and shelter away from the fire front.
- Patrol the inside of your home, including the ceiling space, for embers or small fires that may start.
- Drinks lots of water.
- Check family and pets.

After the fire front has passed:

- Wear protective equipment.
- Go outside once it is safe.
- Check for small spot fires and burning embers:
  - inside roof space
  - under floor boards
  - under house space
  - on veranda and decks

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- on window ledges and door sills
- in roof lines and gutters
- garden beds and mulch
- wood heaps
- outdoor furniture
- sheds and carports

- Continue to drink lots of water.
- Stay at your property until the surrounding area is clear of fire.
- Monitor media outlets – radio, TV, mobile phone and internet.

> You need to be both mentally and physically prepared to carry out your Bushfire Survival Plan

There may be other actions to include, depending on your individual property and the level of bushfire risk you are exposed to.

Include the whole family in creating your Bushfire Survival Plan. You and your family should be aware of the actions you will take at the various FDR levels and it is important to ensure this is incorporated into your Bushfire Survival Plan. The FDR for your area can be found on roadside signs and by visiting www.ruralfire.qld.gov.au and following the FDR link.

It is important that your Bushfire Survival Plan does not rely solely on receiving an alert.

Once you have completed your Bushfire Survival Plan, practise it regularly to ensure everyone involved knows exactly what to do in the event of a fire.

Preparing your Bushfire Survival Kit

It is essential that you have a Bushfire Survival Kit if your choice is to stay with your property. This kit will ensure you and your family have the important equipment you need to stay. For a comprehensive list of equipment needed in a Bushfire Survival Kit see page 14.

Preparing your Bushfire Relocation Kit

It is equally important to have a relocation kit if your choice is to leave early. This kit will ensure you and your family have important items and equipment required to relocate for the time needed. For a comprehensive list of items and equipment needed in a Bushfire Relocation Kit see page 15.

Making a contingency plan

No matter whether your decision is to leave early, well before a bush fire threatens or to stay you should still have a contingency plan as part of your Bushfire Survival Plan. There are many scenarios to consider, such as what you will do if a rapid onset fire starts in your local area making roads impassable or travel particularly dangerous. You should have other options if road travel is not safe.

- Is your house well prepared?
- Can it provide you with protection from radiant heat?
- Have you identified a safer location such as an NSP?

> Sheltering in a well-prepared property is far safer than being out in the open or in a vehicle

Preparing your property

An unprepared property is not only at risk itself, but may also present an increased danger for your neighbours and their homes.

Planning is absolutely critical to safely staying with your home. Staying home involves the risk of psychological trauma, injury and death.

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There are a number of measures you can take to prepare your home and property for bushfire. These include several preparations you must take annually prior to the bushfire season.

Your pre-season property preparations should include:

- Displaying a prominent house number.
- Ensuring there is adequate access for fire trucks to your property – 4 metres wide by 4 metres high with a turn-around area. Reduce vegetation loads along the access path.
- Mowing your grass regularly.
- Removing excess ground fuels and combustible material (long dry grass, dead leaves and branches).
- Clearing of leaves, twigs, bark and other debris from the roof and gutters.
- Purchasing and testing the effectiveness of gutter plugs.
- Trimming low-lying branches 2 metres from the ground surrounding your home.
- Enclosing open areas under your decks and floors.
- Installing fine steel wire mesh screens on all windows, doors, vents and weep holes.
- Pointing LPG cylinder relief valves away from the house.
- Conducting maintenance checks on pumps, generators and water systems.
- Checking that you have sufficient personal protective clothing and equipment.
- Relocating flammable items away from your home including woodpiles, paper, boxes, crates, hanging baskets and garden furniture.
- Sealing all gaps in external roof and wall cladding.
- Checking that the first aid kit is fully stocked.

Bushfire Alerts

If you receive an emergency warning about a bushfire or other emergency, take notice as it could save your life.

There are three types of alert messages to help you make the right safety choices:

Bushfire Advice Message – a fire has started – general information to keep you up to date.

Bushfire Watch and Act Message – represents a heightened level of threat. Conditions are changing, a fire is approaching; lives may come under threat. Take appropriate action.

Bushfire Emergency Warning – is the highest level message advising of impending danger. It may be preceded with the Standard Emergency Warning Signal (SEWS).

> An Emergency Warning means there is a threat to lives and protective action is required immediately.

When a bushfire strikes

You have made your decision to **PREPARE.ACT.SURVIVE.** You have prepared your property before the fire season. You have made your Bushfire Survival Plan. You have practised your Bushfire Survival Plan.

A bushfire is threatening? What do you do?

- Know the FDR for any given day.
- Regularly check the FDR on the Rural Fire Services website at www.ruralfire.qld.gov.au.
- Monitor your media outlets for warnings on bushfire activity.
- Seek out information if you have to, and do not assume that you will receive a warning.
- Leave early or stay according to your Bushfire Survival Plan.
- Act decisively in accordance with your Bushfire Survival Plan.
- Do not adopt the 'wait and see' option.

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Travelling in your vehicle near a bushfire

Sheltering inside a vehicle is a high-risk strategy that can result in death. Whilst sheltering inside a vehicle offers you a slightly higher chance of survival than being caught in the open, having a leave early or stay strategy is a much safer option.

You should never take a journey into areas where the fire danger is catastrophic or extreme. You should consider postponing or finding alternative routes if necessary. If you can smell or see smoke in the distance it is best to u-turn and drive away from the danger.

If you are caught in smoke or flames while on the road:

- Turn on the vehicle's headlights and hazard warning lights.
- If you need to shelter in your vehicle drive your car into a bare, clear area well away from surrounding trees, leaving lights on. Position vehicle to prevent side impact from advancing fire front.
- Close all windows and vents.
- Leave the engine running and turn off the air conditioning system.
- Cover your entire body with woollen or cotton blankets to protect from radiant heat.
- Take shelter below the window level.
- Drink water frequently and stay in the vehicle until the fire front has passed.
- Once the fire front has passed exit the vehicle to inspect the damage and ensure other passengers are safe.

Neighbourhood Safer Places

A Neighbourhood Safer Place (NSP) is a place of last resort for people during a bushfire. An NSP may form part of a back-up plan when:

- Your Bushfire Survival Plan has failed.
- Your plan was to stay but the extent of the fire means that your home cannot withstand the impact of the fire and therefore your home is not a safe place to shelter.
- The fire has escalated to an extreme or catastrophic level and relocation is the safest option.

An NSP is an identified building or open space within the community that can provide a level of protection from the immediate life-threatening effects of a bushfire. NSPs still entail some risk, both in moving to them and while sheltering in them and cannot be considered completely safe.

They are a place of *last resort* in bushfire emergencies only. The following limitations of NSPs need to be considered within your Bushfire Survival Plan:

- NSPs do not cater for pets.
- Firefighters may not be present as they will be fighting the main fire front elsewhere.
- NSPs do not provide meals or amenities.
- They may not provide shelter from the elements, particularly flying embers.

If you are a person with special needs you should give consideration to what assistance you may require at an NSP.

Although QFRS cannot guarantee an immediate presence during a bushfire, every effort will be made to provide support as soon as resources are available.

If an NSP is part of your contingency plan it should not require extended travel through fire-affected areas to get there.

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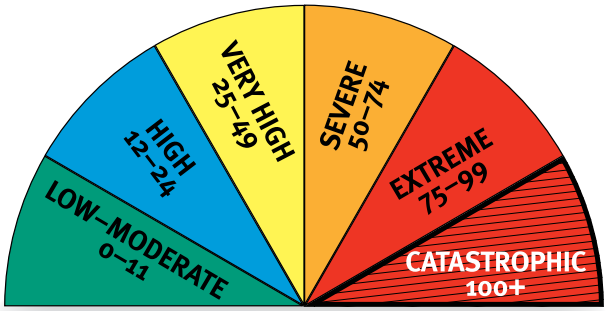
FIRE DANGER RATING



The Fire Danger Rating (FDR) is an early indicator of potential danger and should act as your first trigger for action. The higher the rating the greater the need for you to act.

The FDR is an assessment of the potential fire behaviour, the difficulty of suppressing a fire, and the potential impact on the community should a bushfire occur on a given day.

A Fire Danger Index (FDI) of 'low–moderate' means that fire will burn slowly and that it will be easily controlled, whereas a FDI in excess of 'catastrophic 100+' means that fire will burn so fast and so hot that it will be uncontrollable.

CATASTROPHIC 100+

A fire with a rating of **'catastrophic'** may be uncontrollable, unpredictable and fast moving. The flames will be higher than roof tops. Many people will be injured and many homes and businesses will be destroyed.

During a **'catastrophic'** fire, well-prepared and constructed homes will not be safe. Leaving is the only option for your survival.

EXTREME 75–99

A fire with an **'extreme'** rating may be uncontrollable, unpredictable and fast moving. The flames will be higher than roof tops. During an **'extreme'** fire, people will be injured and homes and businesses will be destroyed.

During an **'extreme'** fire, well-prepared and well-constructed homes may not be safe. Leaving is the only option for your survival.

SEVERE 50–74

A fire with a **'severe'** rating may be uncontrollable and move quickly, with flames that may be higher than roof tops. A **'severe'** fire may cause injuries and some homes or businesses will be destroyed.

During a fire with a **'severe'** rating, leaving is the safest option for your survival. Use your home as a place of safety only if it is well-prepared and well-constructed.

VERY HIGH 25–49

A fire with a **'very high'** danger rating is a fire that can be difficult to control with flames that may burn into the tree tops. During a fire of this type some homes and businesses may be damaged or destroyed.

During a fire with a **'very high'** danger rating, you should use your home as a place of safety only if it is well prepared and well-constructed.

HIGH 12–24

A fire with a **'high'** danger rating is a fire that can be controlled where loss of life is unlikely and damage to property will be limited.

During a fire with a **'high'** danger rating, you should know where to get more information and monitor the situation for any changes.

LOW–MODERATE 0–11

A fire with a **'low to moderate'** rating can be easily controlled and pose little/or no risk to life or property.

During a fire with a **'low to moderate'** rating, you should know where to get more information and monitor the situation for any changes.

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BUSHFIRE SURVIVAL PLAN

Complete your personalised Bushfire Survival Plan lift-out.

Personal details:

Important phone numbers: **000** (Fire, Police and Ambulance)

Family:	Family:	Family:
Work:	Friends:	Friends:
School:		

Important contact details – name and phone number:

Insurer:	Policy Number:	Phone:
Electricity:		Phone:
Water:		Phone:
Gas:		Phone:
Phone Company:		Phone:
Council:	Phone:	

Leave early:

List all names and contact phone numbers of household members who have decided to leave early then complete Section 1.

Names:

Phone:

Stay:

List all names and contact phone numbers of household members who have decided to stay, then complete Section 2.

Names:

Phone:

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Leave early – Section 1

Pull this Bushfire Survival Plan lift-out from this document and keep in a safe place.

Leaving early will always be the safest option for you and your family. It is extremely important for you to prepare a detailed leave early plan to ensure everyone understands what to do and when. Use the boxes below to list tasks to do.

When to go – Think of different triggers that will cause you and your family to leave early. Think about what you will do if you have sent the children to school that day. Think about whether or not you will have to travel from work into the fire zone.

Where to go – Identify one or more safer locations. Consider putting on personal protective clothing before you leave home.

How to get there – What roads will you take to your destination? Have an alternative route if your first choice is impassable.

What to take – Make a list of your most valuable items (e.g. insurance papers, electronic records, photo albums, passports, birth certificates and other important documents).

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PREPARE ACT SURVIVE

Stay – Section 2

Anyone who is not going to leave early must be involved in completing this stay and defend plan to ensure they know what to do. Every stay plan will be different depending on your circumstances. Use the boxes below to list tasks to do.

Before the fire approaches – Start getting yourself and your property ready for a bushfire.

As the fire approaches – Prepare for ember attack on or near your home.
Remember to put on personal protective clothing.

As the fire front arrives – Stay safe by monitoring the fire from inside your home.

After the fire has passed – Patrol your property and extinguish any spot fires or burning embers.
You may need to keep this up for several hours.

Everyone must have a contingency plan

Have a contingency plan – what will you do if you can't activate your Bushfire Survival Plan? Remember that leaving late can lead to loss of lives.

Know where your nearest NSP is and how to get there.

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ACTIVATING YOUR BUSHFIRE SURVIVAL PLAN

Once you have prepared your Bushfire Survival Plan and completed your preparations, it is absolutely essential that you regularly practise and review your plan. This will make sure you and your family are well organised in the event of a bushfire. If a bushfire threatens the health and safety of you, your family, home or property, you should follow these steps:

Step 1 – Activate your Bushfire Survival Plan

Someone must take charge and lead other family members through this emotional experience by carefully communicating the various tasks set out in the plan. Know who is going to leave early and who is going to stay.

Step 2 – Put on your personal protective clothing

Every member of the family must change into their personal protective clothing, including long pants, long-sleeve-shirt and closed-in shoes.

Step 3A – Pack your vehicle and leave early

If your plan is to leave early, pack all valuables in your vehicle (see Relocation Kit) and relocate to your designated safer location. Give yourself enough time to get you and your family to safety. Don't return home until it is safe to do so.

OR

Step3B – Implement your strategy to stay and defend

If your plan is to stay ensure you have all the items in the Bushfire Survival Kit ready to go. This can be a dangerous option and you should be physically and mentally prepared.

Step 4 – Keep informed of bushfire activity

Listen to the radio, television, internet, firefighters and/or police for information on the fire in your local area. Bushfire is dynamic and unpredictable so you need to be prepared for the unexpected. Warnings are not guaranteed so do whatever is necessary to ensure you remain safe.

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BUSHFIRE SURVIVAL KIT

You need to have a Bushfire Survival Kit stored in an area of the house that is safe and easy to access. It should contain:

- protective clothing
- mop
- gloves
- torch
- hoses
- shovel
- towels
- buckets
- safety goggles
- ladder
- medications
- bottled drinking water
- fire extinguishers
- battery operated radio
- spare batteries
- smoke mask
- woollen blankets
- first aid kit
- knapsack sprayer
- protective clothing for the whole family.

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RELOCATION KIT

Write a list of all items your family will need before, during and after your relocation.
The list below shows items that you might like to put in your relocation kit.

- protective clothing for the whole family
- battery operated radio and spare batteries
- safety goggles
- mobile phone and battery charger
- medications
- wallet or purse and money
- clothing (two sets of clothes for each family member)
- identity information (passports, birth certificates)
- bottled water (enough for each relocated family member)
- family and friends' phone numbers
- items of high importance (e.g. family photos, valuables, important documents)
- blankets (natural fibres)
- children's toys

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BUSHFIRE RISK SELF-ASSESSMENT CHECKLIST

This basic self-assessment checklist is designed to give you a greater understanding of the bushfire risk level relevant to your property. Information provided in this assessment will assist you when completing your Bushfire Survival Plan.

Address: _____

_____ Postcode: ____

Property Owner/Property Name: _____

ACCESS/EGRESS Road/Street/Driveway	PLEASE √ APPROPRIATE BOX	
Clear of overhanging vegetation	Yes ☐	No ☐
Unrestricted gate access	Yes ☐	No ☐
Clear of overhead power lines	Yes ☐	No ☐
Able to reverse in	Yes ☐	No ☐
Turning/passing areas	Yes ☐	No ☐
Heavy vehicle access on cattle grid/bridge	Yes ☐	No ☐
Alternative way out	Yes ☐	No ☐
Two wheel drive access	Yes ☐	No ☐

STRUCTURE/S		
Exterior walls – non-combustible	Yes ☐	No ☐
Roof ridge capping sealed	Yes ☐	No ☐
Eaves enclosed	Yes ☐	No ☐
Roofing gutters and valleys clear of leaf litter and fine fuels	Yes ☐	No ☐
Underfloor enclosed	Yes ☐	No ☐
Vents screened	Yes ☐	No ☐
Windows – non-combustible finishing	Yes ☐	No ☐
Deck/veranda non-combustible	Yes ☐	No ☐

WATER SUPPLY		
Reticulated water supply	Yes ☐	No ☐
Tank supply with QFRS access – 50mm male camlock fitting so fire figthers can use water if needed	Yes ☐	No ☐
QFRS accessible external open water supply (dam/pool)	Yes ☐	No ☐
Firefighting pump and hose connected to water supply	Yes ☐	No ☐

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Other considerations

There are a range of other things to be considered regardless of your decision to leave early or stay:

- Firefighting equipment such as pumps, hoses and sprinkler systems should be tested regularly and maintained in maximum operational working condition.
- Firefighters may need access to your property during a bushfire so it is in your best interests to allow enough space for fire trucks (4 metres wide by 4 metres high).
- Your pets, livestock and other animals require proper care and attention during fires. Consider food, medication, transportation and sleeping arrangements for your animals.

Myths versus Reality

Myths	Reality
There will always be a fire truck available to fight a bushfire threatening my home.	Firefighters may be required to fight many fronts of a large fire. Fire trucks and firefighters are finite resources so it is important they are deployed in an appropriate manner to best manage the fire.
I know the back streets in town like the back of my hand so it is OK for me to leave at the last minute.	If your decision in your Bushfire Survival Plan is to leave early, then you should leave well before the fire front reaches your property. Irrespective of your local area knowledge you must stick to your plan and leave early. Leaving late can be fatal.
Someone from an emergency service will knock on my door when it is time to leave.	Emergency services personnel may not be available to alert the community by door-knocking and encouraging you to leave. You need to monitor the bushfire alerts by listening to the radio, watching TV or checking the rural fire website. You need to be ready to leave early if your life or the people in your care are at risk.
My house will not burn down because there is more than 50 metres between my home and nearby bushland.	Most houses which burn down during bushfires have been attacked by flying embers. Under certain conditions embers can cause ignitions up to 20kms in front of the main fire. A combination of your level of preparation and your home's construction will determine the survivability of your home.
I only have to clean my gutters and mow my lawns to prepare my property for bushfire.	Fire requires fuel, heat and oxygen to occur. This means that flames or embers do not necessarily rely solely on your gutters and lawns for fuel. They might utilise overhanging trees, woodpiles, old building materials under the deck or chemicals in the garden shed to sustain them. Take the time to properly prepare your whole property, which includes yourself, your house and your land.

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ATTACHMENT 4

Appeal Rights

Chapter 6 Dispute resolution

Part 1 Appeal rights

229 Appeals to tribunal or P&E Court

(1) Schedule 1 states—

(a) matters that may be appealed to—

(i) either a tribunal or the P&E Court; or

(ii) only a tribunal; or

(iii) only the P&E Court; and

(b) the person—

(i) who may appeal a matter (the ***appellant***); and

(ii) who is a respondent in an appeal of the matter; and

(iii) who is a co-respondent in an appeal of the matter; and

(iv) who may elect to be a co-respondent in an appeal of the matter.

(2) An appellant may start an appeal within the appeal period.

(3) The ***appeal period*** is—

(a) for an appeal by a building advisory agency—10 business days after a decision notice for the decision is given to the agency; or

(b) for an appeal against a deemed refusal—at any time after the deemed refusal happens; or

(c) for an appeal against a decision of the Minister, under chapter 7, part 4, to register premises or to renew the registration of premises—20 business days after a notice is published under section 269(3)(a) or (4); or

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(d) for an appeal against an infrastructure charges notice—20 business days after the infrastructure charges notice is given to the person; or

(e) for an appeal about a deemed approval of a development application for which a decision notice has not been given—30 business days after the applicant gives the deemed approval notice to the assessment manager; or

(f) for an appeal relating to the *Plumbing and Drainage Act 2018*—

(i) for an appeal against an enforcement notice given because of a belief mentioned in the *Plumbing and Drainage Act 2018*, section 143(2)(a)(i), (b) or (c)—5 business days after the day the notice is given; or

(ii) for an appeal against a decision of a local government or an inspector to give an action notice under the *Plumbing and Drainage Act 2018*—5 business days after the notice is given; or

(iii) for an appeal against a failure to make a decision about an application or other matter under the *Plumbing and Drainage Act 2018*—at anytime after the period within which the application or matter was required to be decided ends; or

(iv) otherwise—20 business days after the day the notice is given; or

(g) for any other appeal—20 business days after a notice of the decision for the matter, including an enforcement notice, is given to the person.

Note—

See the P&E Court Act for the court's power to extend the appeal period.

(4) Each respondent and co-respondent for an appeal may be heard in the appeal.

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(5) If an appeal is only about a referral agency's response, the assessment manager may apply to the tribunal or P&E Court to withdraw from the appeal.

(6) To remove any doubt, it is declared that an appeal against an infrastructure charges notice must not be about—

(a) the adopted charge itself; or

(b) for a decision about an offset or refund—

(i) the establishment cost of trunk infrastructure identified in a LGIP; or

(ii) the cost of infrastructure decided using the method included in the local government's charges resolution.

230 Notice of appeal

(1) An appellant starts an appeal by lodging, with the registrar of the tribunal or P&E Court, a notice of appeal that—

(a) is in the approved form; and

(b) succinctly states the grounds of the appeal.

(2) The notice of appeal must be accompanied by the required fee.

(3) The appellant or, for an appeal to a tribunal, the registrar, must, within the service period, give a copy of the notice of appeal to—

(a) the respondent for the appeal; and

(b) each co-respondent for the appeal; and

(c) for an appeal about a development application under schedule 1, section 1, table 1, item 1—each principal submitter for the application whose submission has not been withdrawn; and

(d) for an appeal about a change application under schedule 1, section 1, table 1, item 2—each principal submitter for the application whose submission has not been withdrawn; and

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(e) each person who may elect to be a co-respondent for the appeal other than an eligible submitter for a development application or change application the subject of the appeal; and

(f) for an appeal to the P&E Court—the chief executive; and

(g) for an appeal to a tribunal under another Act—any other person who the registrar considers appropriate.

(4) The ***service period*** is—

(a) if a submitter or advice agency started the appeal in the P&E Court—2 business days after the appeal is started; or

(b) otherwise—10 business days after the appeal is started.

(5) A notice of appeal given to a person who may elect to be a co-respondent must state the effect of subsection (6).

(6) A person elects to be a co-respondent to an appeal by filing a notice of election in the approved form—

(a) if a copy of the notice of appeal is given to the person—within 10 business days after the copy is given to the person; or

(b) otherwise—within 15 business days after the notice of appeal is lodged with the registrar of the tribunal or the P&E Court.

(7) Despite any other Act or rules of court to the contrary, a copy of a notice of appeal may be given to the chief executive by emailing the copy to the chief executive at the email address stated on the department's website for this purpose.

231 Non-appealable decisions and matters

(1) Subject to this chapter, section 316(2), schedule 1 and the P&E Court Act, unless the Supreme Court decides a decision or other matter under this Act is affected by jurisdictional error, the decision or matter is non-appealable.

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(2) The *Judicial Review Act 1991*, part 5 applies to the decision or matter to the extent it is affected by jurisdictional error.

(3) A person who, but for subsection (1) could have made an application under the *Judicial Review Act 1991* in relation to the decision or matter, may apply under part 4 of that Act for a statement of reasons in relation to the decision or matter.

(4) In this section—

decision includes—

(a) conduct engaged in for the purpose of making a decision; and

(b) other conduct that relates to the making of a decision; and

(c) the making of a decision or the failure to make a decision; and

(d) a purported decision; and

(e) a deemed refusal.

non-appealable, for a decision or matter, means the decision or matter—

(a) is final and conclusive; and

(b) may not be challenged, appealed against, reviewed, quashed, set aside or called into question in any other way under the *Judicial Review Act 1991* or otherwise, whether by the Supreme Court, another court, any tribunal or another entity; and

(c) is not subject to any declaratory, injunctive or other order of the Supreme Court, another court, any tribunal or another entity on any ground.

232 Rules of the P&E Court

(1) A person who is appealing to the P&E Court must comply with the rules of the court that apply to the appeal.

(2) However, the P&E Court may hear and decide an appeal even if the person has not complied with rules of the P&E Court.

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ATTACHMENT 5

Amended Infrastructure Charges Notice

Amended or Replacement Infrastructure Charges Notice (s76, s119 or s142 *Planning Act 2016*)

Moreton Bay Regional Council
PO Box 159, CABOOLTURE QLD 4510
ABN 92 967 232 136

Applicant: Orchard (Gibbings) Developments Pty Ltd

Applicant Address: Corporate Centre One 2 Corporate Court BUNDALL QLD 4217

Date of Notice: 9 January 2025
(s121(3)(a) Planning Act 2016)

Notice Reference Number: DA/2024/5622

APPROVAL DETAILS:

Approval No.: DA/2024/5622

Type of Approval: Development Permit for Reconfiguring A Lot

Approval Description: Request to Change (Minor) - Reconfiguring a Lot - Development Permit for Subdivision (1 into 133 Lots, Park and Open Space over 3 Stages)

PREMISES TO WHICH THE CHARGES APPLY: *(s121(1)(c) Planning Act 2016)*

Property Address: 26 Gibbings Court, Lilywood

Real Property Description: Lot 4 SP 191667

LEVIED CHARGE:

Version of Charges Resolution: Ver 10 - 5 October 2022

Current Amount of the Levied Charge
(s121(1)(a) Planning Act 2016) **$2,728,649.88**

Notes:
1) See "CHARGE DETAILS" below for details of how the charge has been worked out.
2) This infrastructure charge does not include the levied charges payable for water supply and sewerage networks to be levied by the Northern SEQ Distributor-Retailer Authority (trading as Unitywater).

DATE CHARGES ARE PAYABLE: *(s121(1)(d) Planning Act 2016)*

The levied charges are payable in accordance with the timing stated in section 122 of the *Planning Act 2016*, namely:

For reconfiguring a lot - when Council approves the plan of reconfiguration

Before paying the total levied charges you must request an Infrastructure Charges Fee Statement showing the total levied charge payable at the time of payment. Refer to the 'Important Information' section below for details.

CHARGE DETAILS: *(s121(1)(b) Planning Act 2016)*

PROPOSED DEVELOPMENT

Description	Base Charge Rate	Quantity	Base Charge	Council Proportion	Indexation	Total
Residential Use 3 or more Bedroom Dwelling - Proposed	Dwelling	133	$20,671.59	60%	Nil	$2,749,321.47

CREDITS

Description	Base Charge Rate	Quantity	Base Charge	Council Proportion	Indexation	Total Credit
Residential Use 3 or more Bedroom Dwelling - Existing	Dwelling	1	$20,671.59	60%	Nil	-$20,671.59

OFFSET

						Total Offset
Refer below for details						$0.00

LEVIED CHARGE

	Levied Charge	**$2,728,649.88**

Amended or Replacement Infrastructure Charges Notice (s76, s119 or s142 *Planning Act 2016*)

Moreton Bay Regional Council
PO Box 159, CABOOLTURE QLD 4510
ABN 92 967 232 136

OFFSET / REFUND DETAILS: *(s121(1)(f) Planning Act 2016)*

In accordance with s121(1)(f) of the *Planning Act 2016*, this table identifies whether an offset or refund applies and, if so, information about the offset or refund, including when any refund will be given

Does an offset or refund apply?	No
Timing of Refund:	Not applicable

INFRASTRUCTURE AGREEMENT ESTABLISHMENT COST DETAILS:

IA Number (Council Ref):	**DA/2023/4679**
Description:	**Gibbings Court Infrastructure Agreement 2023**
Agreement Commencement Date:	**20 December 2023**

NOTES:

1. Represents the amount of the original value of the infrastructure item agreed in the infrastructure agreement.
2. Represents the amount (if any) of the original agreed value applied as an offset, or refunded, previously (eg an earlier stage of the development).
3. Represents the amount of the original agreed value applied as an offset, or to be refunded, under this Infrastructure Charges Notice.
4. Represents the amount of the original agreed value that remains available after the issuing of this Infrastructure Charges Notice.

IMPORTANT INFORMATION:

PAYMENT
This notice is due and payable by the due time shown. Cheques, money orders or postal notes should be made payable to MORETON BAY REGIONAL COUNCIL and crossed "Not Negotiable". Change cannot be given on cheque payments. Property owners will be liable for any dishonour fees.

LEVIED CHARGE IS SUBJECT TO AUTOMATIC INCREASES *(s121(1)(e) Planning Act 2016))*
In accordance with section 121(1)(e) of the *Planning Act 2016*, the Levied Charge in this notice will be automatically increased from the date of this notice until the date of payment, following the methodology in Council's charges resolution. Under that methodology, an automatic increase will be the lesser of:

(a) the difference between the levied charge and the maximum adopted charge that Council could have levied for the development when the charge is paid; or
(b) the increase worked out using the PPI, adjusted according to the 3-yearly PPI average, for the period starting on the day the charge was levied, and ending on the day the charge is paid.

Where indexation is applicable, an online spreadsheet calculator is available to assist with making the calculation.

Council takes no responsibility for the accuracy of the calculator.

REQUEST FOR AN UPDATED CALCULATION AND INFRASTRUCTURE CHARGES FEE STATEMENT
For confirmation of the current charges applicable for this development and to obtain an Infrastructure Charges Fee Statement, you may submit a request to Council. To avoid having to make repeat requests, it is recommended that your request is not made until you are ready to make payment of the infrastructure charges.

GOODS AND SERVICES TAX
GST is not applicable to the Infrastructure Charges contained in this Notice.

APPEAL RIGHTS *(s121(3)(b) Planning Act 2016)*
You have a right to appeal against the decision to give this notice. Attached is an extract from schedule 1 of the *Planning Act 2016* detailing your appeal rights

REPRESENTATIONS ABOUT THIS NOTICE
During your appeal period *(see s229(3)(d) Planning Act 2016)*, you may make representations about this notice under section 125 of the *Planning Act 2016*. Section 126 of the *Planning Act 2016* allows you to suspend your appeal period if you need more time to make such representations

INFRASTRUCTURE CHARGE ENQUIRIES
Enquiries regarding this infrastructure charge notice should be directed to MORETON BAY REGIONAL COUNCIL, Development Services, during office hours, Monday to Friday on phone (07) 3205 0555.

Schedule 1 Appeals

section 229

1 Appeal rights and parties to appeals

(1) Table 1 states the matters that may be appealed to—

(a) the P&E court; or

(b) a tribunal.

(2) However, table 1 applies to a tribunal only if the matter involves—

(a) the refusal, or deemed refusal of a development application, for—

(i) a material change of use for a classified building; or

(ii) operational work associated with building work, a retaining wall, or a tennis court; or

(b) a provision of a development approval for—

(i) a material change of use for a classified building; or

(ii) operational work associated with building work, a retaining wall, or a tennis court; or

(c) if a development permit was applied for—the decision to give a preliminary approval for—

(i) a material change of use for a classified building; or

(ii) operational work associated with building work, a retaining wall, or a tennis court; or

(d) a development condition if—

(i) the development approval is only for a material change of use that involves the use of a building classified under the Building Code as a class 2 building; and

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(ii) the building is, or is proposed to be, not more than 3 storeys; and

(iii) the proposed development is for not more than 60 sole-occupancy units; or

(e) a decision for, or a deemed refusal of, an extension application for a development approval that is only for a material change of use of a classified building; or

(f) a decision for, or a deemed refusal of, a change application for a development approval that is only for a material change of use of a classified building; or

(g) a matter under this Act, to the extent the matter relates to the Building Act, other than a matter under that Act that may or must be decided by the Queensland Building and Construction Commission; or

(h) a decision to give an enforcement notice—

(i) in relation to a matter under paragraphs (a) to (g); or

(ii) under the *Plumbing and Drainage Act 2018*; or

(i) an infrastructure charges notice; or

(j) the refusal, or deemed refusal, of a conversion application; or

(l) a matter prescribed by regulation.

(3) Also, table 1 does not apply to a tribunal if the matter involves—

(a) for a matter in subsection (2)(a) to (d)—

(i) a development approval for which the development application required impact assessment; and

(ii) a development approval in relation to which the assessment manager received a properly made submission for the development application; or

(b) a provision of a development approval about the identification or inclusion, under a variation approval, of a matter for the development.

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(4) Table 2 states the matters that may be appealed only to the P&E Court.

(5) Table 3 states the matters that may be appealed only to the tribunal.

(6) In each table—

(a) column 1 states the appellant in the appeal; and

(b) column 2 states the respondent in the appeal; and

(c) column 3 states the co-respondent (if any) in the appeal; and

(d) column 4 states the co-respondents by election (if any) in the appeal.

(7) If the chief executive receives a notice of appeal under section 230(3)(f), the chief executive may elect to be a co-respondent in the appeal.

(8) In this section—

storey see the Building Code, part A1.1.

Table 1
Appeals to the P&E Court and, for certain matters, to a tribunal

1. Development applications
For a development application other than an excluded application, an appeal may be made against—
(a) the refusal of all or part of the development application; or
(b) the deemed refusal of the development application; or
(c) a provision of the development approval; or
(d) if a development permit was applied for—the decision to give a preliminary approval.

Attachment - extract of appeal rights

Table 1 Appeals to the P&E Court and, for certain matters, to a tribunal			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
The applicant	The assessment manager	If the appeal is about a concurrence agency's referral response—the concurrence agency	1 A concurrence agency that is not a co-respondent 2 If a chosen assessment manager is the respondent—the prescribed assessment manager 3 Any eligible advice agency for the application 4 Any eligible submitter for the application
2. Change applications For a change application other than an excluded application, an appeal may be made against— (a) the responsible entity's decision on the change application; or (b) a deemed refusal of the change application.			

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Attachment - extract of appeal rights

Table 1
Appeals to the P&E Court and, for certain matters, to a tribunal

Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
1 The applicant 2 If the responsible entity is the assessment manager—an affected entity that gave a pre-request notice or response notice	The responsible entity	If an affected entity starts the appeal—the applicant	1 A concurrence agency for the development application 2 If a chosen assessment manager is the respondent—the prescribed assessment manager 3 A private certifier for the development application 4 Any eligible advice agency for the change application 5 Any eligible submitter for the change application
3. Extension applications For an extension application other than an extension application called in by the Minister, an appeal may be made against— (a) the assessment manager's decision on the extension application; or (b) a deemed refusal of the extension application.			

Attachment - extract of appeal rights

Table 1
Appeals to the P&E Court and, for certain matters, to a tribunal

Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
1 The applicant 2 For a matter other than a deemed refusal of an extension application—a concurrence agency, other than the chief executive, for the application	The assessment manager	If a concurrence agency starts the appeal—the applicant	If a chosen assessment manager is the respondent—the prescribed assessment manager
4. Infrastructure charges notices An appeal may be made against an infrastructure charges notice on 1 or more of the following grounds— (a) the notice involved an error relating to— (i) the application of the relevant adopted charge; or *Examples of errors in applying an adopted charge—* • the incorrect application of gross floor area for a non-residential development • applying an incorrect 'use category', under a regulation, to the development (ii) the working out of extra demand, for section 120; or (iii) an offset or refund; or (b) there was no decision about an offset or refund; or (c) if the infrastructure charges notice states a refund will be given—the timing for giving the refund; or (d) for an appeal to the P&E Court—the amount of the charge is so unreasonable that no reasonable relevant local government could have imposed the amount.			

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Table 1 Appeals to the P&E Court and, for certain matters, to a tribunal			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
The person given the infrastructure charges notice	The local government that gave the infrastructure charges notice	—	—
5. Conversion applications An appeal may be made against— (a) the refusal of a conversion application; or (b) a deemed refusal of a conversion application.			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
The applicant	The local government to which the conversion application was made	—	—
6. Enforcement notices An appeal may be made against the decision to give an enforcement notice.			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
The person given the enforcement notice	The enforcement authority	—	If the enforcement authority is not the local government for the premises in relation to which the offence is alleged to have happened—the local government

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Attachment - extract of appeal rights

Table 1
Appeals to the P&E Court and, for certain matters, to a tribunal

7. Enforcement notices under the *Plumbing and Drainage Act 2018*

An appeal may be made against the decision to give an enforcement notice.

Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
The person given the enforcement notice	The local government that gave the enforcement notice	—	—

Table 2
Appeals to the P&E Court only

1. Appeals from tribunal

An appeal may be made against a decision of a tribunal, other than a decision under section 252, on the ground of—

(a) an error or mistake in law on the part of the tribunal; or

(b) jurisdictional error.

Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
A party to the proceedings for the decision	The other party to the proceedings for the decision	—	—

2. Eligible submitter appeals

For a development application or change application other than an excluded application, an appeal may be made against the decision to approve the application, to the extent the decision relates to—

(a) any part of the development application or change application that required impact assessment; or

(b) a variation request.

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Attachment - extract of appeal rights

Table 2 Appeals to the P&E Court only			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
1 For a development application—an eligible submitter for the development application 2 For a change application—an eligible submitter for the change application	1 For a development application—the assessment manager 2 For a change application—the responsible entity	1 The applicant 2 If the appeal is about a concurrence agency's referral response—the concurrence agency	Another eligible submitter for the application
3. Eligible submitter and eligible advice agency appeals For a development application or change application other than an excluded application, an appeal may be made against a provision of the development approval, or a failure to include a provision in the development approval, to the extent the matter relates to— (a) any part of the development application or change application that required impact assessment; or (b) a variation request.			

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Attachment - extract of appeal rights

Table 2 Appeals to the P&E Court only			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
1 For a development application—an eligible submitter for the development application 2 For a change application—an eligible submitter for the change application 3 An eligible advice agency for the development application or change application	1 For a development application—the assessment manager 2 For a change application—the responsible entity	1 The applicant 2 If the appeal is about a concurrence agency's referral response—the concurrence agency	Another eligible submitter for the application
4. Compensation claims An appeal may be made against— (a) a decision under section 32 about a compensation claim; or (b) a decision under section 265 about a claim for compensation; or (c) a deemed refusal of a claim under paragraph (a) or (b).			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
A person dissatisfied with the decision	The local government to which the claim was made	—	—

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Attachment - extract of appeal rights

Table 2
Appeals to the P&E Court only

5. Registered premises

An appeal may be made against a decision of the Minister under chapter 7, part 4.

Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
1 A person given a decision notice about the decision 2 If the decision is to register premises or renew the registration of premises—an owner or occupier of premises in the affected area for the registered premises who is dissatisfied with the decision	The Minister	—	If an owner or occupier starts the appeal—the owner of the registered premises

6. Local laws

An appeal may be made against a decision of a local government, or conditions applied, under a local law about—

(a) the use of premises, other than a use that is the natural and ordinary consequence of prohibited development; or

(b) the erection of a building or other structure.

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Attachment - extract of appeal rights

Table 2 Appeals to the P&E Court only			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
A person who— (a) applied for the decision; and (b) is dissatisfied with the decision or conditions.	The local government	—	—

Table 3 Appeals to a tribunal only			
1. Building advisory agency appeals An appeal may be made against giving a development approval for building work to the extent the building work required code assessment against the building assessment provisions.			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
A building advisory agency for the development application related to the approval	The assessment manager	The applicant	1 A concurrence agency for the development application related to the approval 2 A private certifier for the development application related to the approval

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Attachment - extract of appeal rights

Table 3
Appeals to a tribunal only

2. Inspection of building work

An appeal may be made against a decision of a building certifier or referral agency about the inspection of building work that is the subject of a building development approval under the Building Act.

Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
The applicant for the development approval	The person who made the decision	—	—

3. Certain decisions under the Building Act and the *Plumbing and Drainage Act 2018*

An appeal may be made against—

(a) a decision under the Building Act, other than a decision made by the Queensland Building and Construction Commission, if an information notice about the decision was given or required to be given under that Act; or

(b) a decision under the *Plumbing and Drainage Act 2018*, other than a decision made by the Queensland Building and Construction Commission, if an information notice about the decision was given or required to be given under that Act.

Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
A person who received, or was entitled to receive, an information notice about the decision	The entity that made the decision	—	—

4. Failure to decide an application or other matter under the Building Act

An appeal may be made against a failure to make a decision under the Building Act within the period required under that Act, other than a failure by the Queensland Building and Construction Commission to make a decision, if an information notice about the decision was required to be given under that Act.

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Attachment - extract of appeal rights

Table 3 Appeals to a tribunal only			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
A person who was entitled to receive notice of the decision	The entity that failed to make the decision	—	—
5. Failure to decide an application or other matter under the *Plumbing and Drainage Act 2018* An appeal may be made against a failure to make a decision under the *Plumbing and Drainage Act 2018* within the period required under that Act, other than a failure by the Queensland Building and Construction Commission to make a decision, if an information notice about the decision was required to be given under that Act.			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
A person who was entitled to receive an information notice about the decision	The entity that failed to make the decision	—	—

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