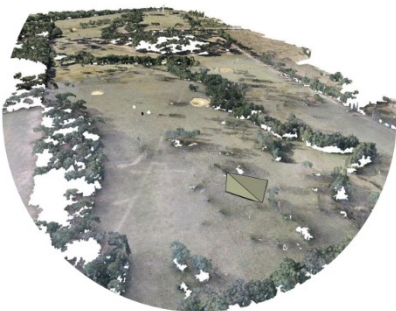
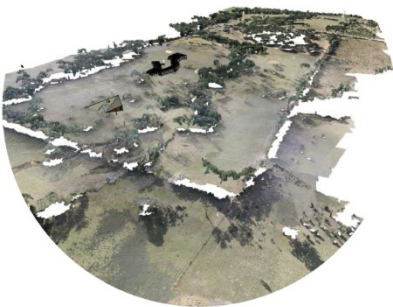


**HEPHZIBAH HUNTER VALLEY
INVESTMENT PTY LTD**

**FLOOD RESPONSE MANAGEMENT
PLAN – LOT 22 DP791884 / LOT 40
DP755255
PALMERS LANE POKOLBIN**





Level 2, 160 Clarence Street
Sydney, NSW, 2000

Tel: (02) 9299 2855
Fax: (02) 9262 6208
Email: wma@wmawater.com.au
Web: www.wmawater.com.au

FLOOD RESPONSE MANAGEMENT PLAN – LOT 22 DP791884 / LOT 40 DP755255 PALMERS LANE POKOLBIN

MAY 2019

Project Flood Response Management Plan – Lot 22 DP791884 / Lot 40 DP755255 Palmers Lane Pokolbin		Project Number 117046	
Client Hephzibah Hunter Valley Investment Pty Ltd		Client's Representative Jason Wasiak – JW Planning	
Authors Rhys Hardwick Jones Richard Dewar		Prepared by 	
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FLOOD RESPONSE MANAGEMENT PLAN

LOT 22 DP791884 / LOT 40 DP755255

PALMERS LANE POKOLBIN

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1. OVERVIEW

This document outlines a plan for managing flood risk for the tourism operations at 22 Palmers Lane Pokolbin (see Figure 1 for site location), comprising serviced apartments and a function centre with restaurant.

The main part of this report presents background information about the nature of flood risk at the site, modelling of flood risk at the site and local area, and the factors that were considered in developing the site management plan.

The appendices to this report are intended to be operational documents that can be used to implement the flood risk management strategies at the site. Appendix A contains a Flood Action Plan in the form of reference sheets that are to be printed and displayed in the site reception office, and which outline actions and responsibilities before, during and after flooding at the site. Appendix B contains a form for recording periodic reviews and changes to the plan, which should be undertaken annually or after any flooding occurs.

This Flood Response Management Plan has been developed specifically for tourism operations at the site, including tourist accommodation units, function centre, restaurant, kitchen, reception and board room. This document is not applicable at other sites in the area, or for other operational uses at the site.

The site is flood prone from a local creek which runs through the site, and which crosses the main access driveway into the site. The primary access road to the site (Gillards Road), is also subject to flooding from First Creek.

2. SITE INFORMATION

2.1. Summary

Name	Details
Street Address	22 Palmers Lane Pokolbin NSW 2320
Summary of Potential Flooding Risks	There is a local unnamed creek through the site, which crosses the main entry driveway from Gillards Road. The site has been designed such that the facilities will not be at risk from flooding up to and including a 1% AEP flood event (100 years ARI). For more extreme floods, the access road and function centre may be subject to inundation. This flood mechanism is unlikely to present a significant risk to life if people remain in the facility for the duration of the flooding. Gillards Road is subject to more frequent flooding from First Creek, approximately 1.7 km to the east of the site. The flood depths and velocities across Gillards Road can reach hazardous levels for vehicles and pedestrians. The primary risk to life from flooding for people at the site will be if visitors/staff drive through floodwaters when Gillards Road or the site driveway are overtopped.

2.2. People on Site

It is anticipated the site will be used by a wide variety of people, representing a typical cross-section of the community as well as international visitors. This will include people of varying age, mobility, and varying degrees of proficiency with English language. People on site will include service staff and site management personnel, delivery drivers, maintenance contractors, and tourists and other visitors using the facilities.

The time each individual spends on site will vary from minutes to days, depending on the purpose of the visit. Customers and staff will arrive at the location primarily by car or bus along Gillards Road. The site includes car parking for 115 vehicles.

2.3. Buildings and Open Spaces.

The development includes 72 accommodation units housed in two buildings, and a separate reception building which contains the function room, kitchen/restaurant and boardroom facilities. This building is located approximately 120 m from the accommodation facilities.

Each of the buildings are up to two-storeys in height. Only the reception building is subject to potential flooding on the ground floor, and only in extreme storm events with intensity greater than 1% AEP. The first floor of this building would be above the maximum expected possible flood level. The accommodation buildings are above the maximum expected possible flood extent (both ground floor and first floor).

The entry driveway from Gillards Road crosses the local unnamed creek through the site. The culverts under the road have been designed to carry the 1% AEP flow. However blockage of the culverts with debris during a storm, or other unforeseen events, could result in the road overtopping in less severe storm events.

2.4. Stock / Equipment

During a normal operating conditions, the following may be housed on site:

- Up to 115 private vehicles in the car park areas;
- Personal belongings of staff and visitors;
- Furniture and equipment for the tourist accommodation and function centre
- Supplies for the accommodation and restaurant;
- Site office equipment including computers, electrical and communication equipment;
- Cleaning and maintenance supplies.

2.5. Trading Hours

The facility will operate on a twenty-four hour basis. Staff would be present on site at all times.

3. FLOOD BEHAVIOUR AND RISK ASSESSMENT

3.1. Overview

The proposed development site is located within the Black Creek Catchment. Mary Annes Creek, a tributary of Black Creek, runs from the west of the study area to the north, just west of the site. Flood behaviour for this creek and its tributaries through the site was modelled by WMAwater in a previous flood study dated January 2016.

There is onsite flood risk associated with the local creeks. Due to the natural topography sloping from south to north, there is a significant difference in the 1% AEP flood level across the site, and therefore minimum floor level requirements for future development will vary across the site.

WMAwater considers that the primary flood risk associated with the tourism development site will be if visitors/staff drive through floodwaters, when either Gillards Road or the site driveway are overtopped. The degree of this existing risk and potential mitigation measures are discussed below.

3.2. Flood Behaviour – On Site

A smaller unnamed tributary of Mary Annes Creek runs through the proposed site from the southeast to the northwest, meeting Mary Annes Creek to the north. The main entry driveway from Gillards Road crosses over this creek (near the south-eastern entry point).

Maps of the on-site peak flood depth for various intensities of storm events are attached to this document:

- Figure 2 – 5% AEP;
- Figure 3 – 1% AEP;
- Figure 4 – Probable Maximum Flood (PMF).

Figure 5 to Figure 7 show the flood hazard categories for these same events.

The hazard categories are based on the depth and velocity of floodwaters, with the following definitions:

- H1.** Generally safe for people, vehicles and buildings.
- H2.** Unsafe for small vehicles.
- H3.** Unsafe for vehicles, children and the elderly.
- H4.** Unsafe for people and vehicles.
- H5.** Unsafe for people and vehicles. All buildings vulnerable to structural damage. Some less robust building types vulnerable to failure.
- H6.** Unsafe for people and vehicles. All building types considered vulnerable to failure.

AEP refers to Annual Exceedance Probability. 5% AEP means there is a 5% chance of that

level of flooding occurring each year. 1% AEP means a 1% chance every year. The PMF has an approximate AEP of less than 1 in 1 million per year for a catchment of this size.

The site has been designed such that the facilities will not be at risk from flooding up to and including a 1% AEP flood event (100 years ARI) plus 0.5 m freeboard. For more extreme floods, the access road and function centre may be subject to inundation.

Because the PMF is extremely low likelihood, but is often associated with catastrophic consequences, the PMF can be difficult to address in risk management (which requires consideration of both likelihood and consequence). Given that the majority of the proposed development is above the PMF flood extent, in this instance the low likelihood means that there is very little risk associated with the PMF event.

Flooding is therefore unlikely to present a significant risk to life if people remain in the facility for the duration of the flooding (typical duration of flooding and isolation is discussed in Section 3.4).

3.3. Flood Behaviour – Off Site (Gillards Road)

Gillards Road is subject to more frequent flooding from First Creek, approximately 1.7 km to the east of the site. Upstream of Gillards Road, First Creek has a catchment area of approximately 734 ha.

Photo 1: Existing 600 mm pipe (eastern culvert) at Gillards Road (upstream)



Gillards Road has an extended low section at First Creek that acts like a broad causeway during flood events. There are two separate existing culverts along this causeway:

- A 600 mm pipe at the eastern edge of the causeway, closer to McDonalds Road (Photo 1); and
- A 450 mm pipe at the eastern edge, closer to the site (Photo 2).

Photo 2: Existing 450 mm pipe (western culvert) at Gillards Road



The lowest point of Gillards Road is between these two culverts (Photo 3). When flow rates in First Creek exceed the capacity of the culverts, flow will occur across the road at this low point.

Photo 3: Lowpoint of Gillards Road between existing culverts, looking east (left) and west (right)



There is a large farm dam between Gillards Road and Broke Road (Photo 4). During extended dry periods when this dam is relatively empty, it is likely that much of the upstream catchment runoff will be captured by the dam before reaching Gillards Road. However in extended wet periods when the dam is full, most of the runoff will reach Gillards Road, and overtopping of the

road may occur relatively frequently.

Photo 4: Existing farm dam upstream of Gillards Road, viewed from Broke Road



WMAwater undertook additional flood modelling for this assessment to determine the likelihood and severity of potential flooding across Gillards Road at First Creek. WMAwater extended and refined the existing flood models from the January 2016 Flood Study for the site, using the same methodology and catchment assumptions. The farm dam upstream of Gillards Road was assumed to full prior to the design storm burst occurring. The 10% AEP and 1% AEP flood events were modelled.

Maps of the Gillards Road peak flood depth and levels under existing conditions are attached to this document as follows:

- Figure 8 – 10% AEP;
- Figure 9 – 1% AEP;

Figure 10 and Figure 11 show the flood hazard categories for these same events.

The modelling indicates that under existing conditions, the flood depths and velocities across Gillards Road can reach hazardous levels for vehicles and pedestrians in the 10% AEP, 1% AEP events, and PMF events. Other events have not been investigated. It is possible that under current conditions, flow may be hazardous for vehicles and pedestrians in floods smaller than a 10% AEP event.

3.4. Duration of Inundation

The site is subject to flash flooding, which will occur quickly and with very little warning, but also recede relatively rapidly after rainfall subsides. Diagram 1 shows the time of rise and fall of flooding on site according to modelling undertaken by WMAwater. Diagram 2 shows the modelled time of rise and fall on Gillards Road.

Diagram 1: Indicative Timing of Flooding and Duration of Inundation – On Site Driveway

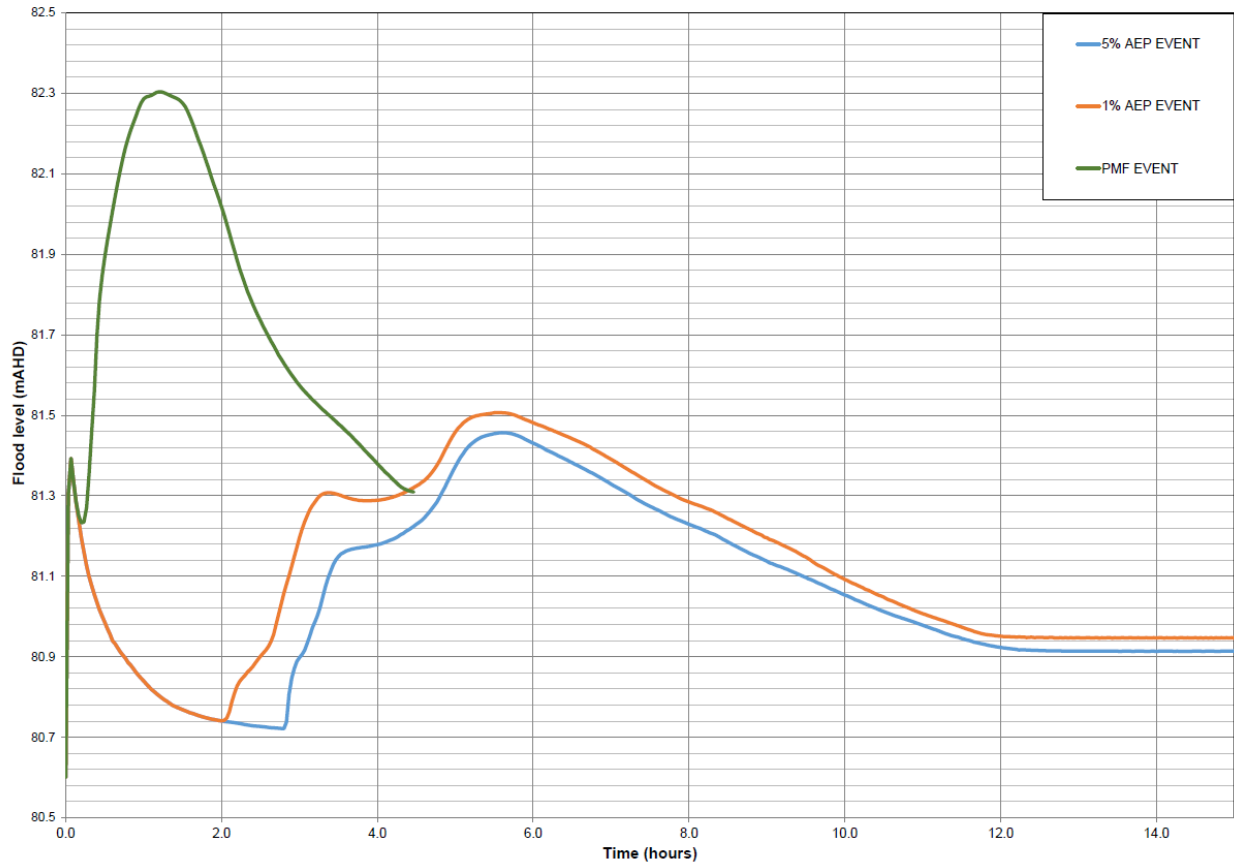
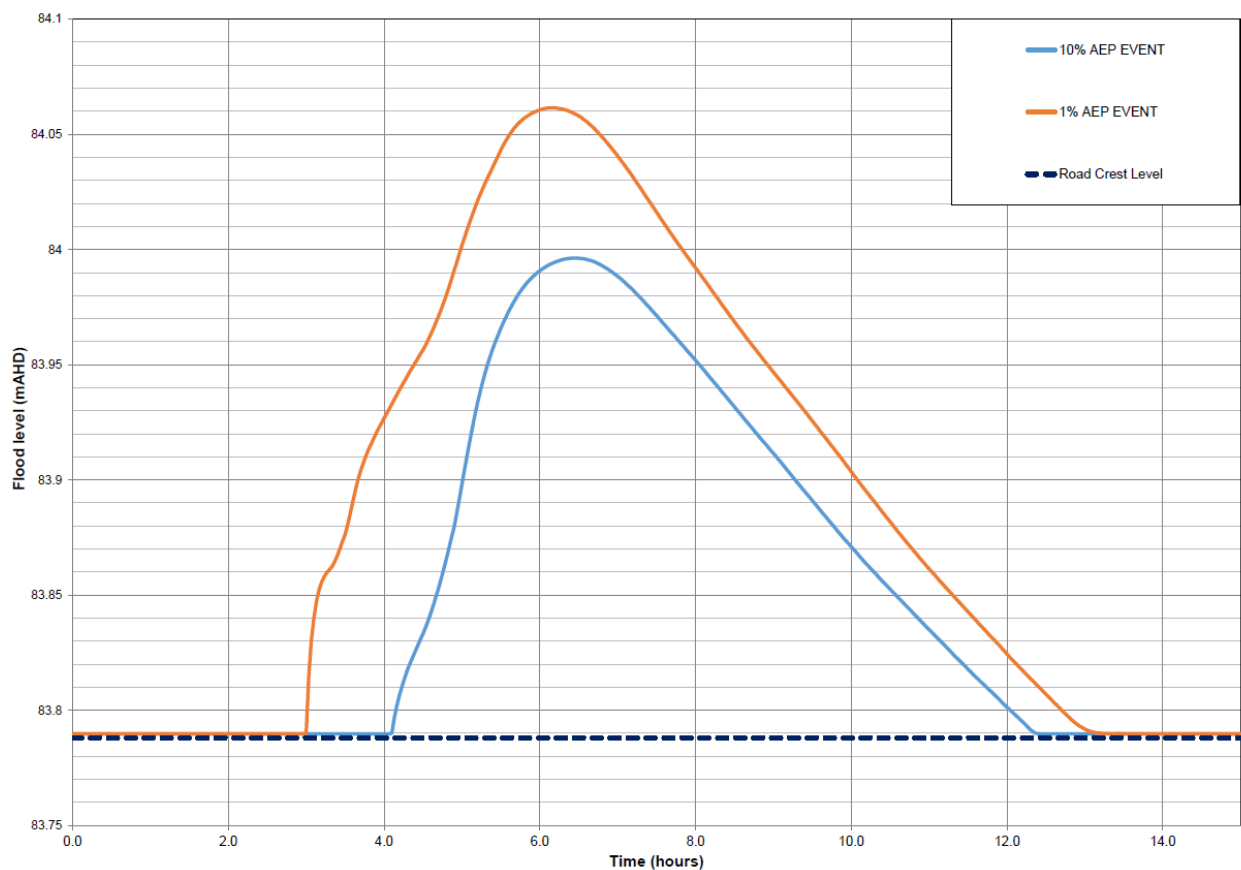


Diagram 2: Indicative Timing of Flooding and Duration of Inundation – Gillards Road



Flooding within the site would generally be expected to subside below hazardous levels within approximately 4 hours. Flooding of Gillards Road would only be above hazardous levels for a period of generally 2 to 3 hours, although it may take up to 8 or 9 hours for floodwaters to completely recede below the road level.

3.5. Supplies and Utilities

It is anticipated that the facility would have several days' requirements of water and food on-site as part of normal operations. A period of isolation of up to 12 hours due to flood would not cause hardship due to lack of provisions. Storage of separate supplies for a flood emergency is therefore not required.

Sewage disposal at the site is by on-site treatment and re-use. The on-site treatment facilities are above the PMF level and do not require special consideration with regards to this response plan (apart from damage that may occur directly to the treatment ponds during an extreme storm).

Service standards for water and electricity are the responsibility of the local utility providers. Blackout or disruption to water supplies are risks that can occur separately to flooding, or in conjunction with flooding during an extreme storm. The emergency response plan for the site relies primarily on remaining indoors during an extreme storm, and staying away from flooded roads, to mitigate against flood risk. Coincident blackouts during such periods or interruptions to water supplies would not be expected to significantly exacerbate the flood hazard, given the relatively short period of isolation. The response plan includes provision of torches in emergency kits. Other sources of backup power are not required to manage flood risks. Contact information for utilities providers should be kept up to date so that they can be notified of any service disruptions.

4. EVACUATION AND FLOOD RESPONSE

4.1. Existing Flood Warnings and Response

4.1.1. Bureau of Meteorology flood warning

The Bureau of Meteorology issues quantitative flood warnings for specified forecast locations including expected flood class (major, moderate, minor) and timing of flooding. The Bureau does not cover quantitative flash-flood warnings, defined as rain-to-flood times of less than six hours. The area around the site is subject to flash-flooding and, as such, The Bureau does not issue quantitative warnings of river level heights for the study area.

Flood warning locations in the Hunter River catchment include Maitland (Belmore Bridge) and Singleton, but these are only relevant for Hunter River flooding.

4.1.2. Bureau of Meteorology severe weather warnings

The Bureau of Meteorology issues severe weather warnings whenever severe weather is occurring in an area or expected to develop or move into an area. This includes very heavy rain that may lead to flash flooding. The warnings describe the area under threat and the expected hazards. Warnings are issued with varying lead-times, depending on the weather situation, and can be from one hour to 24 hours or more (The Bureau of Meteorology, 2019). The Bureau also issues severe thunderstorm warnings that include thunderstorms producing heavy rainfall which may cause flash flooding.

4.1.3. SES warnings and response

The SES is the legislated Combat Agency for floods and is responsible for the control of flood operations. This includes the coordination of other agencies and organisations for flood management tasks. The Cessnock City SES Local Controller is responsible for dealing with floods as detailed in the State Flood Plan.

4.1.4. Flood intelligence

The SES does not have any formal flood intelligence for Gillards Road or the site. The work undertaken in this assessment is the only available flood modelling for these creeks.

4.1.5. Response

Response is via community volunteers, coordinated by SES. Response operations are outlined in the Cessnock City Local Flood Plan (SES NSW, 2009). Of relevance to the study, the start of response operations will begin:

- On receipt of a Bureau of Meteorology Flood Watch or Severe Weather Warning.
- When other evidence leads to an expectation of flooding within the council area.

It is stated in the Cessnock City Local Flood Plan (SES NSW, 2009) that no evacuations are necessary in most floods, but severe floods on the creeks in the Council area may create a need for a small number of evacuations.

Given the lack of flood intelligence available to the SES for the local creeks around the site, the SES unlikely to deploy resources to the area during a flash flood, or order any evacuations, unless called to respond to a specific incident.

4.2. Overview of Proposed Site Response Strategy

It will not be possible in real time during a flood to understand what the peak of the flood will be for this site. This is because:

- the time between the rainfall occurring and flooding occurring is short (generally less than an hour, and possibly as short as 15 minutes for local flash flooding on-site, and in the order of an hour for flooding of Gillards Road),
- the location of the most intense rainfall bursts for flood-producing storms in small catchments such as this cannot be predicted accurately ahead of time; and
- as a result of the above, there are no formal flood warning systems in place for the catchment.

There will likely be very little warning of flooding, apart from very heavy local rainfall. General warnings about severe storms will be available for the Sydney Metropolitan region provided by the Bureau of Meteorology (BoM) but these will not provide specific information for this site. Cessnock Council may in the future develop flood warning systems for nearby catchments or larger creeks, but these will only provide a general indication of potential flood risk for the catchments and creeks affecting the site.

Automated monitoring of flooding in the area will not be possible. It will be necessary to rely on observations from the site, monitoring of rainfall conditions, reports of flooding from local residents to determine whether a response is required.

There is a single flood risk management strategy to be followed as soon as any flooding of the site or Gillards Road becomes apparent. That management plan is to remain on site during very intense storm events, and not to drive on local roads, which may be subject to hazardous overtopping.

Small vehicles can become unstable and vulnerable to stall at depths of only 0.2 m to 0.3 m. Advice from the SES is that nobody should drive through any depth of floodwater, because of the difficulty for the driver to accurately gauge the depth of water, to accurately follow the path of the road, and because conditions underneath the water may have changed (such as failure of the pavement or a pothole).

As a result, once overbank flooding occurs across any roads in the site, operations of the site should be completely suspended, and no vehicles should be driven within the facility. Personal

safety of all staff and visitors is the primary priority of the flood management response. Under no circumstances should staff or visitors put themselves at risk to save cars from damage, or to exit the site when the roadways are flooded.

4.3. Evacuation – “Shelter in Place”

The design of the site buildings is such that the first floor will be above the flood level for even the most extreme possible storm event (PMF). The evacuation and response plan for the site is based on the principle that during any flooding, personnel will “shelter in place” by moving to the nearest building and remaining in the building until after flooding has subsided. Normal site operations are to cease entirely during flooding, in order to focus on maintaining safety and minimising potential flood damage.

The instructions for flood response and assembly points are shown on the attached poster (Appendix A) for display throughout the premises. Furthermore, two full colour posters related to road safety during floods are attached to this document, and are to be prominently displayed in the reception building, and included in the information books for each of the accommodation units.

A detailed Flood Action Plan is attached to this document outlining specific responses and responsibilities, and the trigger points for these responses.

5. ASSESSMENT OF FLOOD RISK MITIGATION MEASURES

WMAwater considers that on-site flood risk is adequately managed by the design of the site (which places buildings at level that provides an acceptable level of risk), and implementation of the Flood Action Plan attached to this report.

However the modelling assessment identified that Gillards Road does not currently meet Council's typical cross-drainage standards. Under current conditions, flooding across the road in a 10% AEP event would be hazardous for vehicles and pedestrians. Given that the development is likely to generate traffic along this road, and that visitors to the site will be generally unfamiliar with the area and with the flood risks, mitigation measures to reduce the hazard are appropriate.

The road is currently overtopped over quite a long stretch (up to 200 m in a 10% AEP event), and raising this full section of road to prevent or minimise the overtopping would probably not be cost effective. WMAwater used the available flood models to assess whether upgrading the existing culverts would reduce the level of hazard, and what size of culverts would be required to reduce the overtopping hazard to H1 conditions for a 10% AEP event. The following upgrades were found to meet this requirement:

- Replacing the existing 600 mm pipe (eastern culvert) with a 2.4 m wide by 1.2 m high box culvert; and
- Replacing the existing 450 mm pipe (western culvert) with a 1.8 m wide by 0.9 m high box culvert.

Photo 5: Existing flood warning sign on Gillards Road at entry from McDonalds Road



The risk in larger flood events could be further mitigated by improving signage and implementing

a crash barrier along the section of road where flood hazard exceeds the H1 category for the 1% AEP event. Presently, the only flood sign on Gillards Road is located at the intersection with McDonalds Road, approximately 500 m to the east of the flood-prone section of road (Photo 5). In this location, the sign is unlikely to be observed by casual visitors. Furthermore, flood depth indicators are presently only located at the eastern edge of the causeway (Photo 6), and are not visible to motorists approaching from the west when the road is overtopped.

Photo 6: Existing flood depth indicators on Gillards Road near 600 mm pipe culvert, looking east



WMAwater recommends that the following mitigation measures be implemented to mitigate the flood risk to motorists accessing the site via Gillards Road:

1. Upgrade both First Creek culverts as described above;
2. Improve signage at the causeway by placing depth indicators and RMS standard “Road Subject to Flooding” signs on both the eastern and western approaches to First Creek; and
3. Place a crash barrier on the downstream (northern) side of Gillards Road, for a length of approximately 30 m where hazard exceeds the H1 category in a 1% AEP event, to prevent cars from being washed off the road (see Figure 12 and Figure 14).

FIGURE 1
SITE LOCATION PLAN

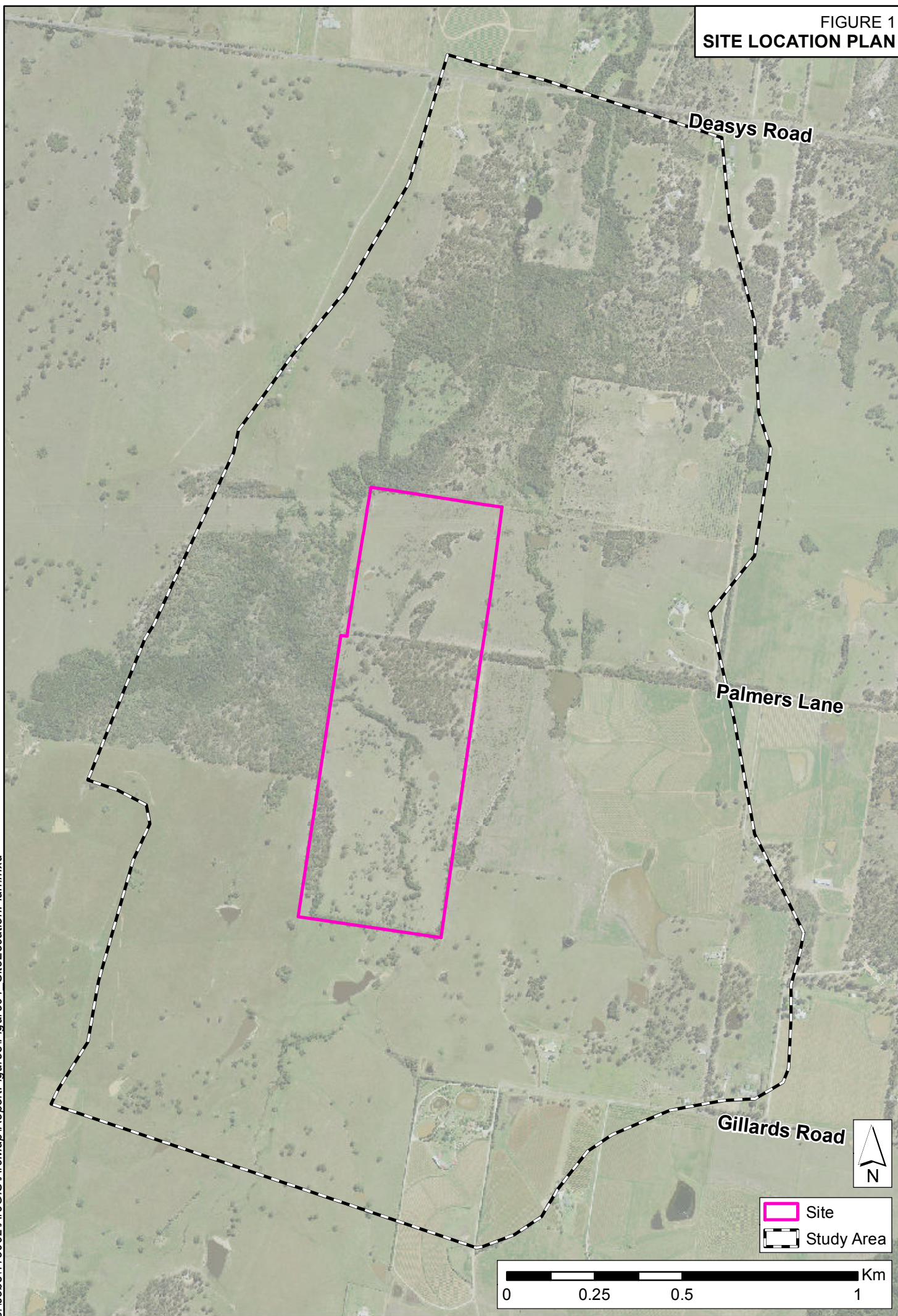


FIGURE 2
**ONSITE
 PEAK FLOOD LEVELS AND DEPTHS
 5% AEP EVENT**

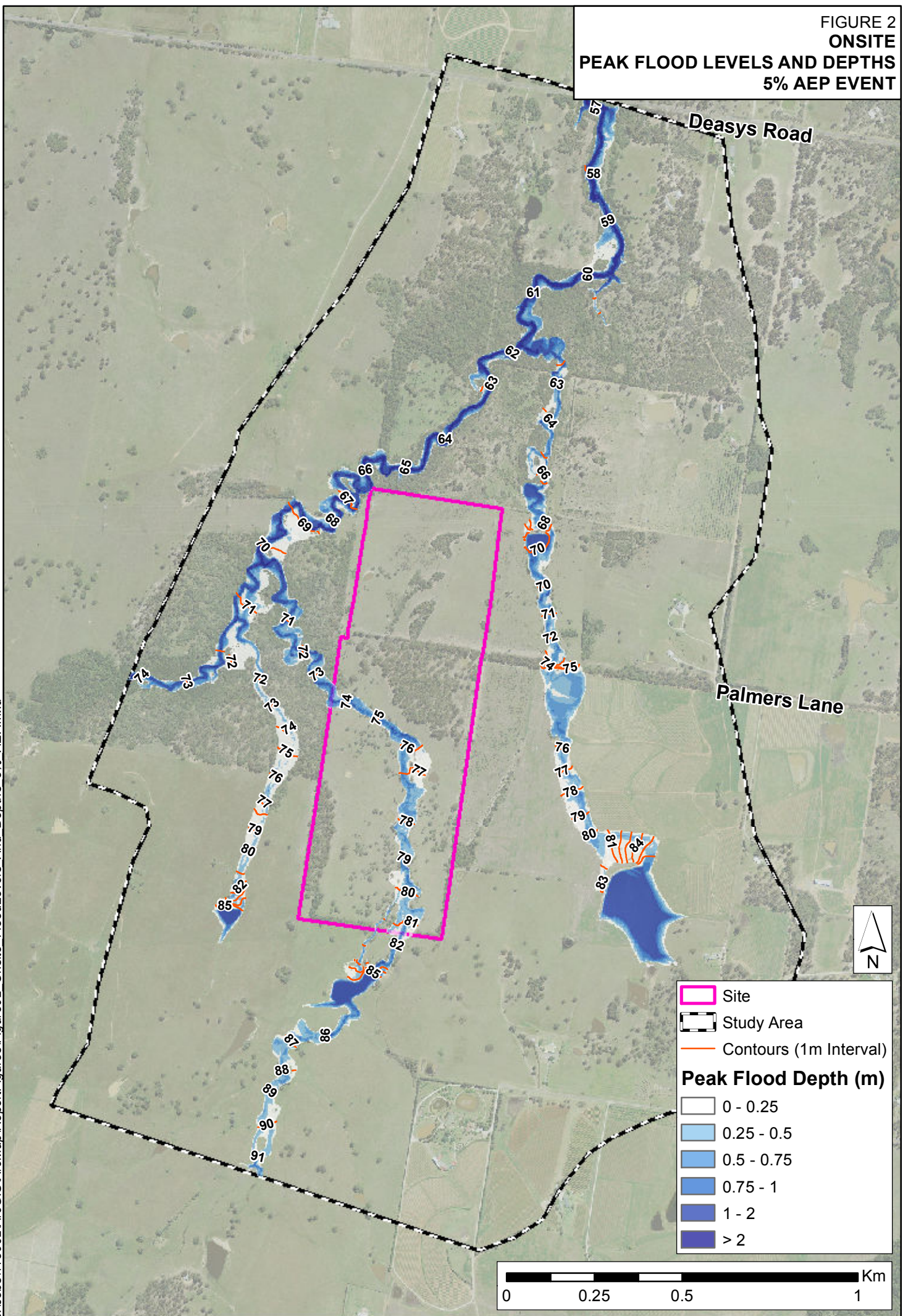


FIGURE 3
**ONSITE
 PEAK FLOOD LEVELS AND DEPTHS
 1% AEP EVENT**

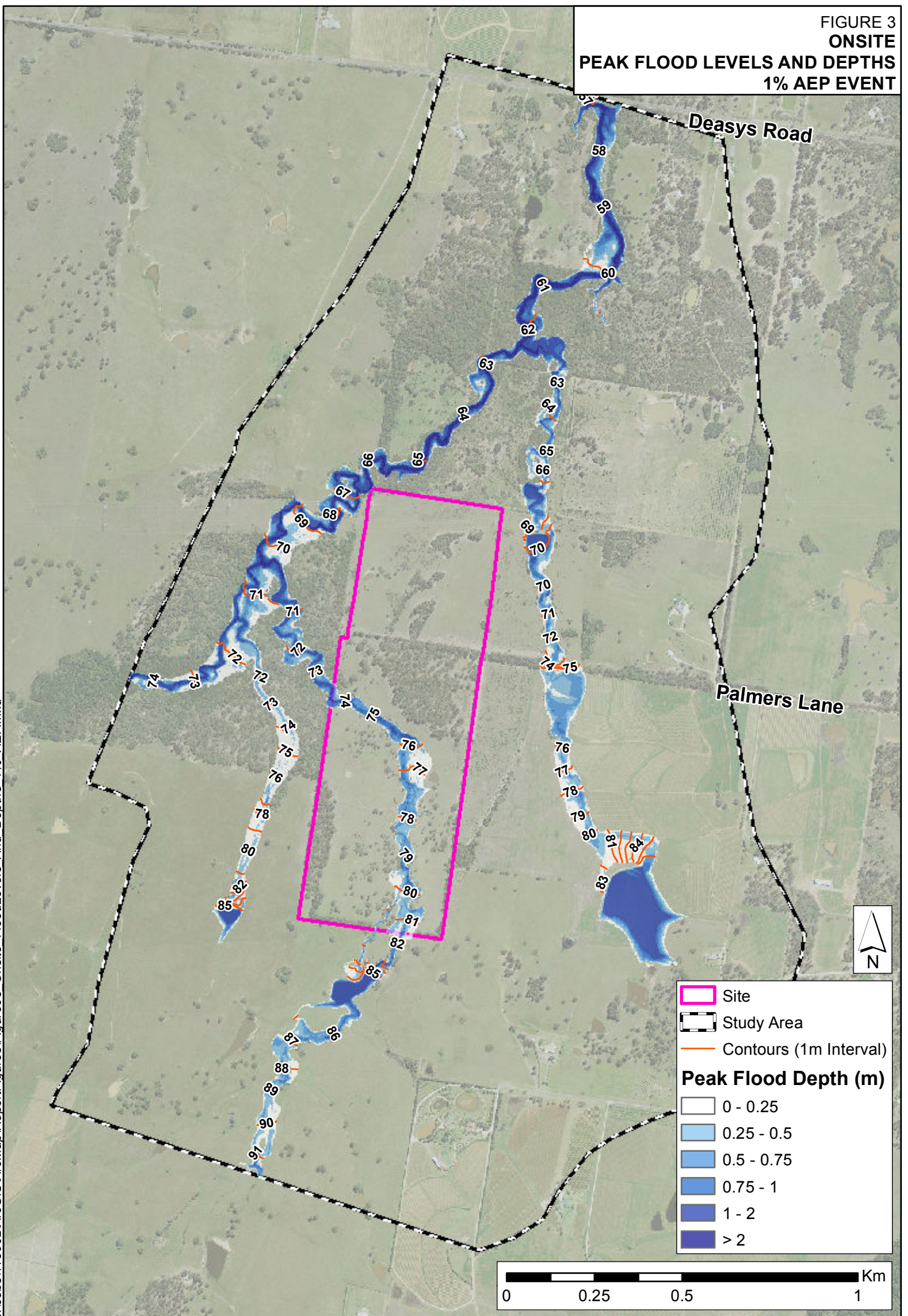


FIGURE 4
**ONSITE
 PEAK FLOOD LEVELS AND DEPTHS
 PMF EVENT**

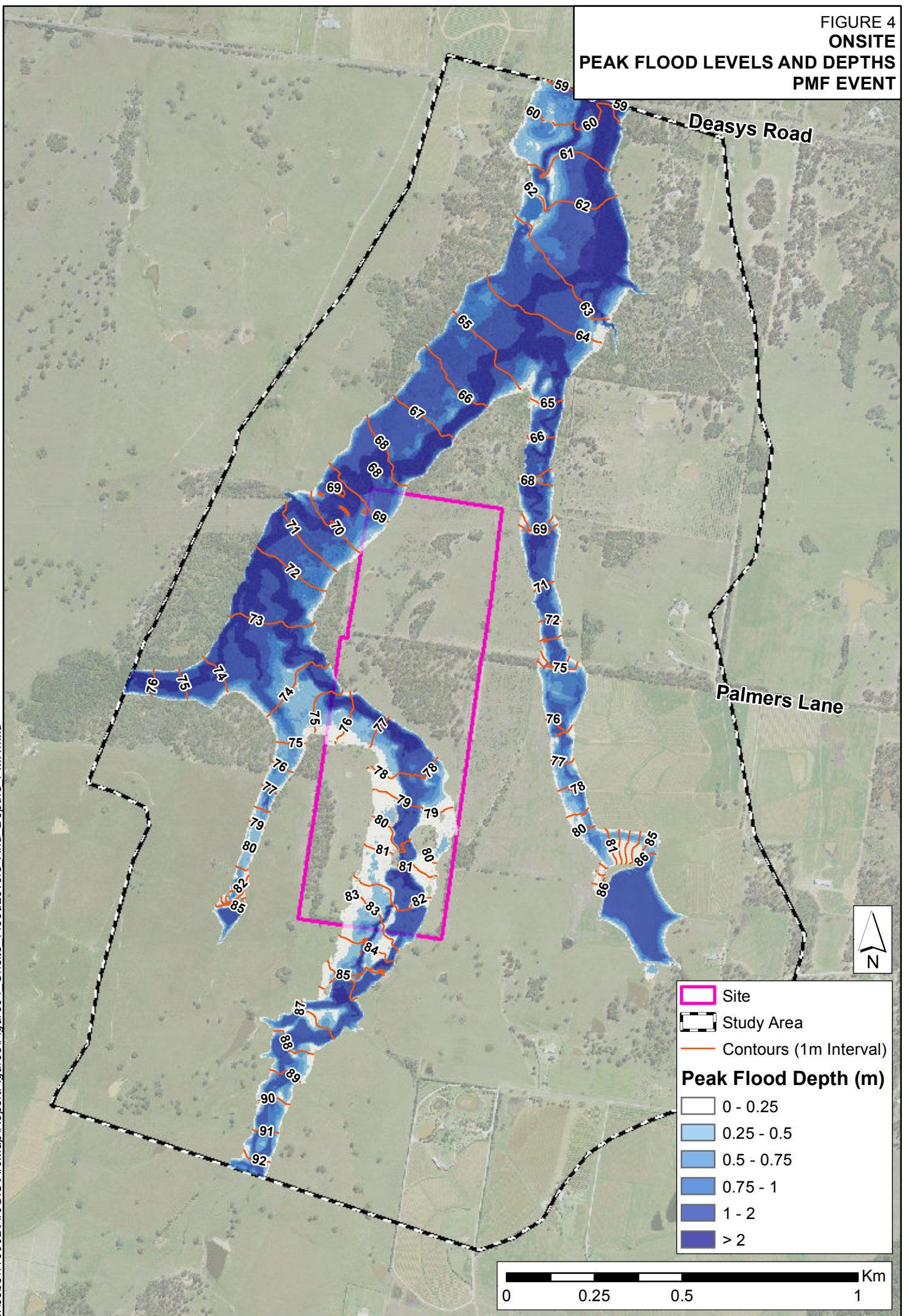


FIGURE 5
ONSITE HAZARD CATEGORIES
5% AEP EVENT

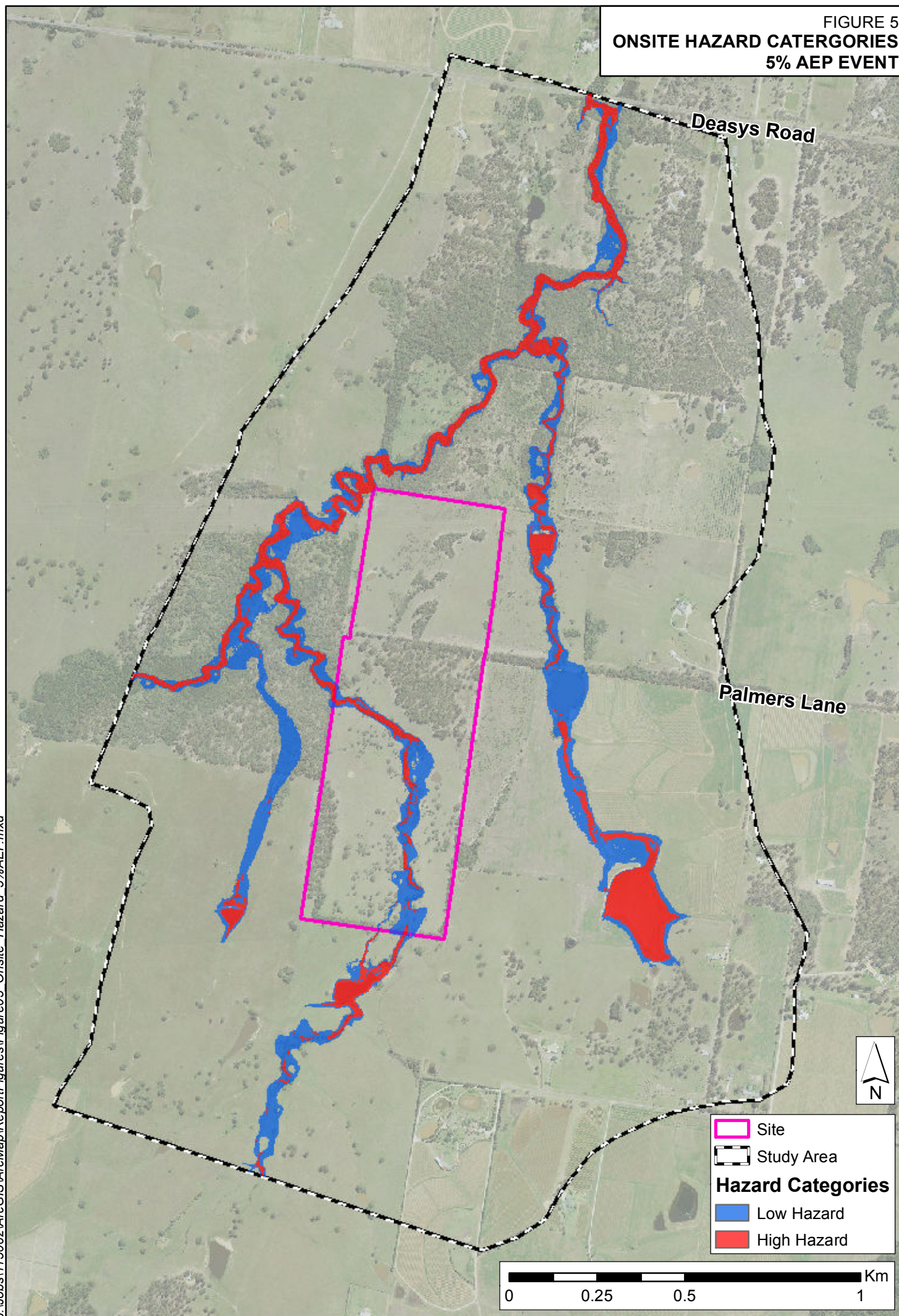


FIGURE 6
ONSITE HAZARD CATEGORIES
1% AEP EVENT

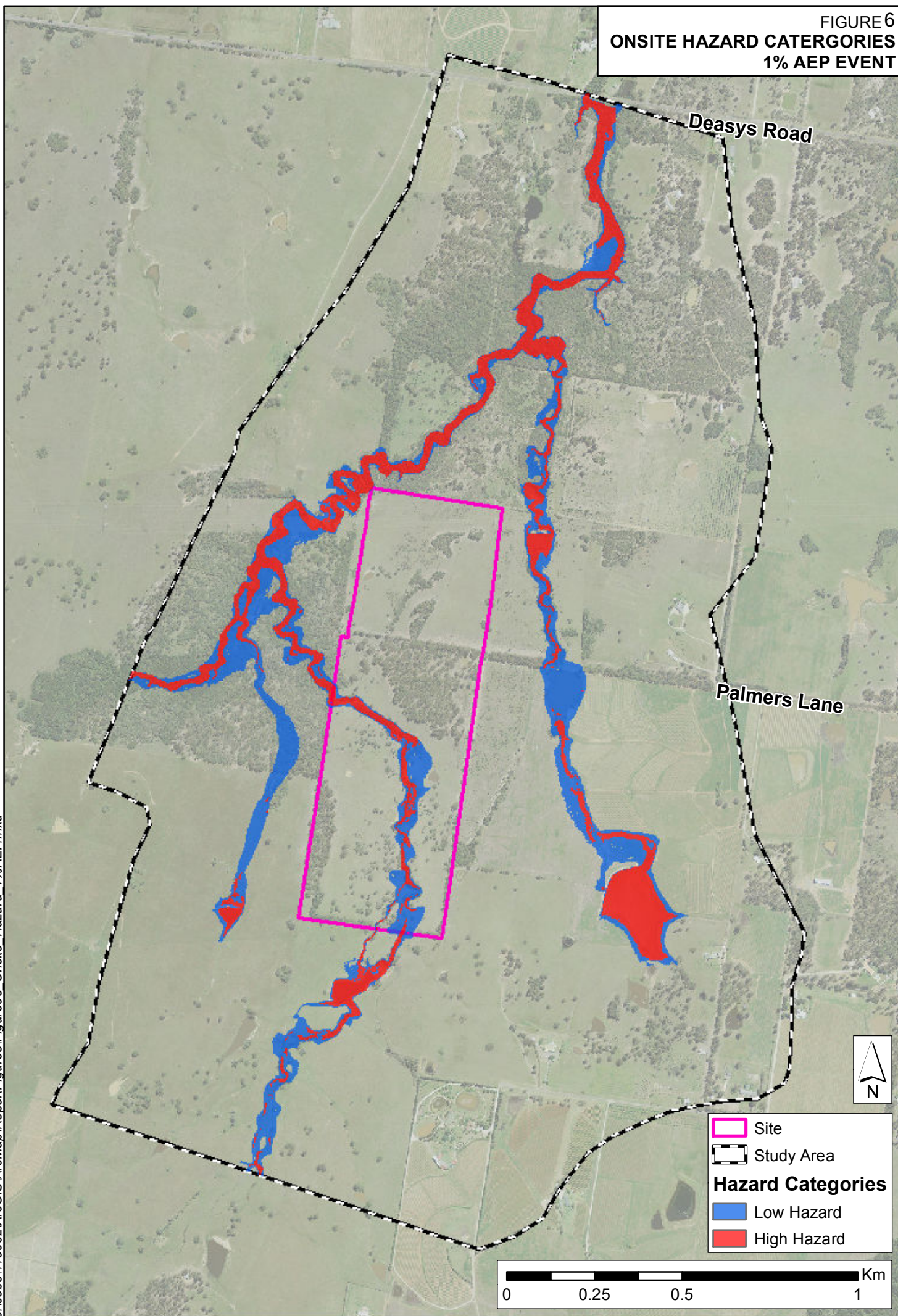


FIGURE 7
ONSITE HAZARD CATEGORIES
PMF EVENT

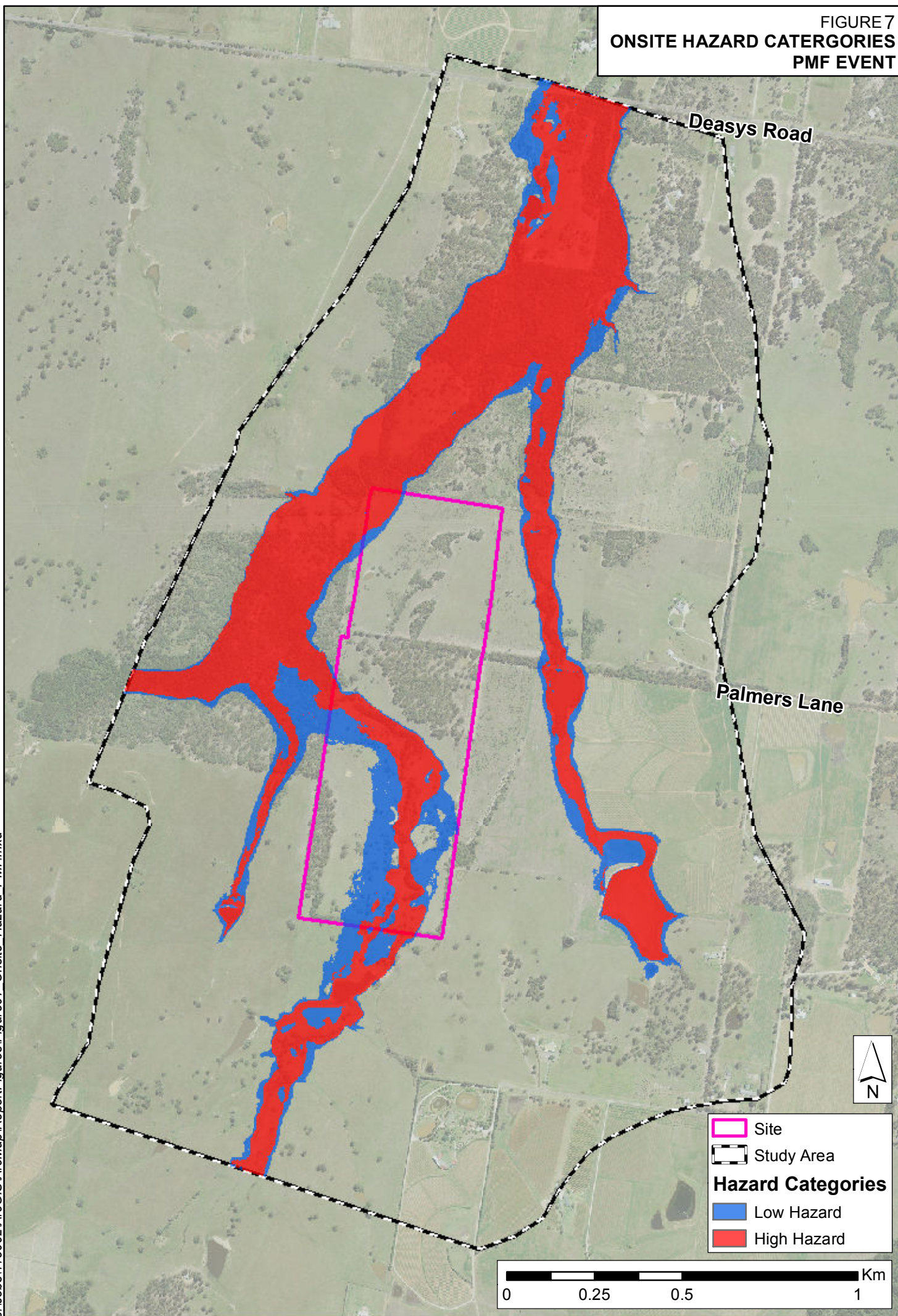


FIGURE 8
GILLARDS ROAD
PEAK FLOOD DEPTH AND LEVEL CONTOURS
10% AEP EVENT
BASE CASE

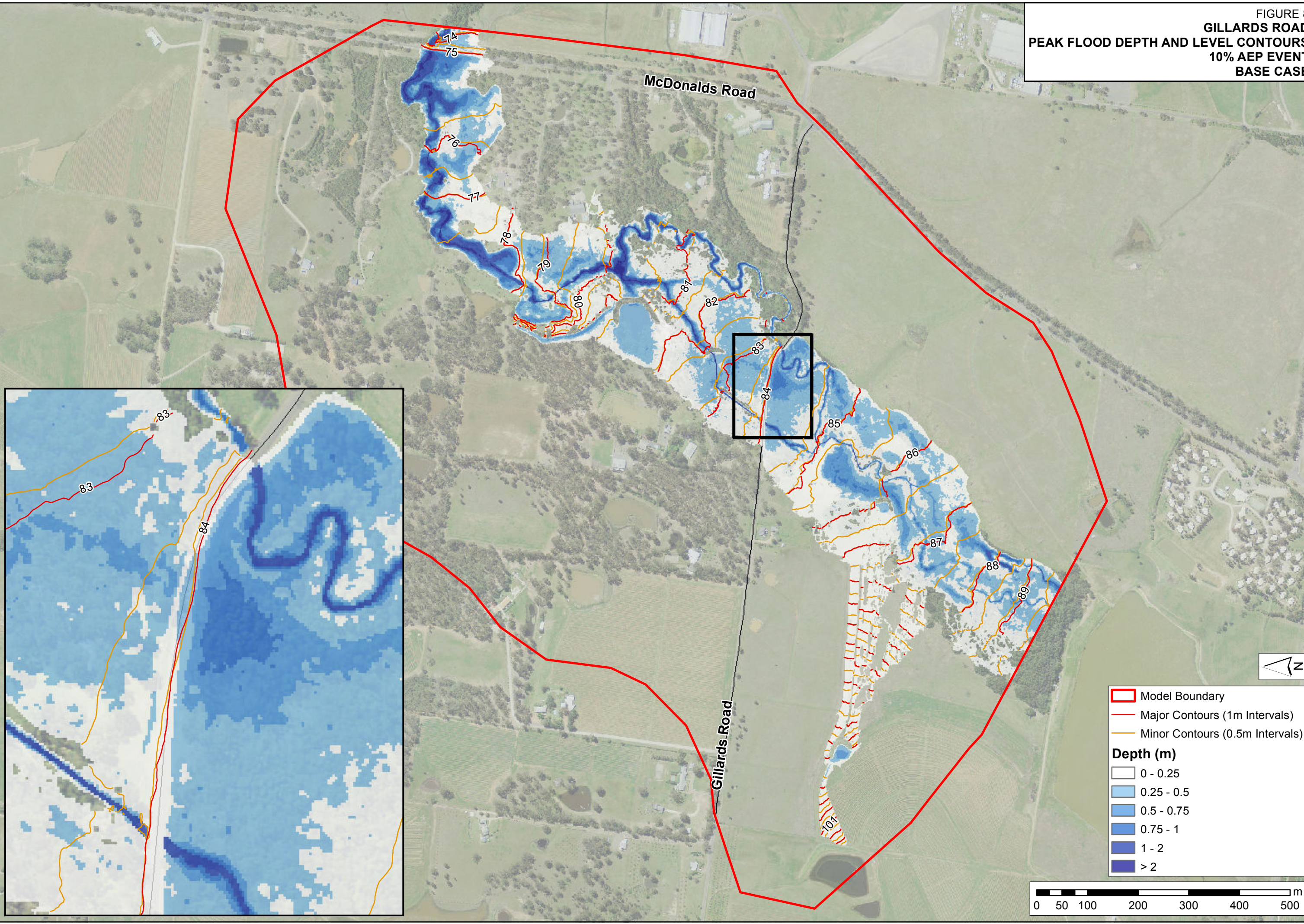


FIGURE 9
GILLARDS ROAD
PEAK FLOOD DEPTH AND LEVEL CONTOURS
1% AEP EVENT
BASE CASE

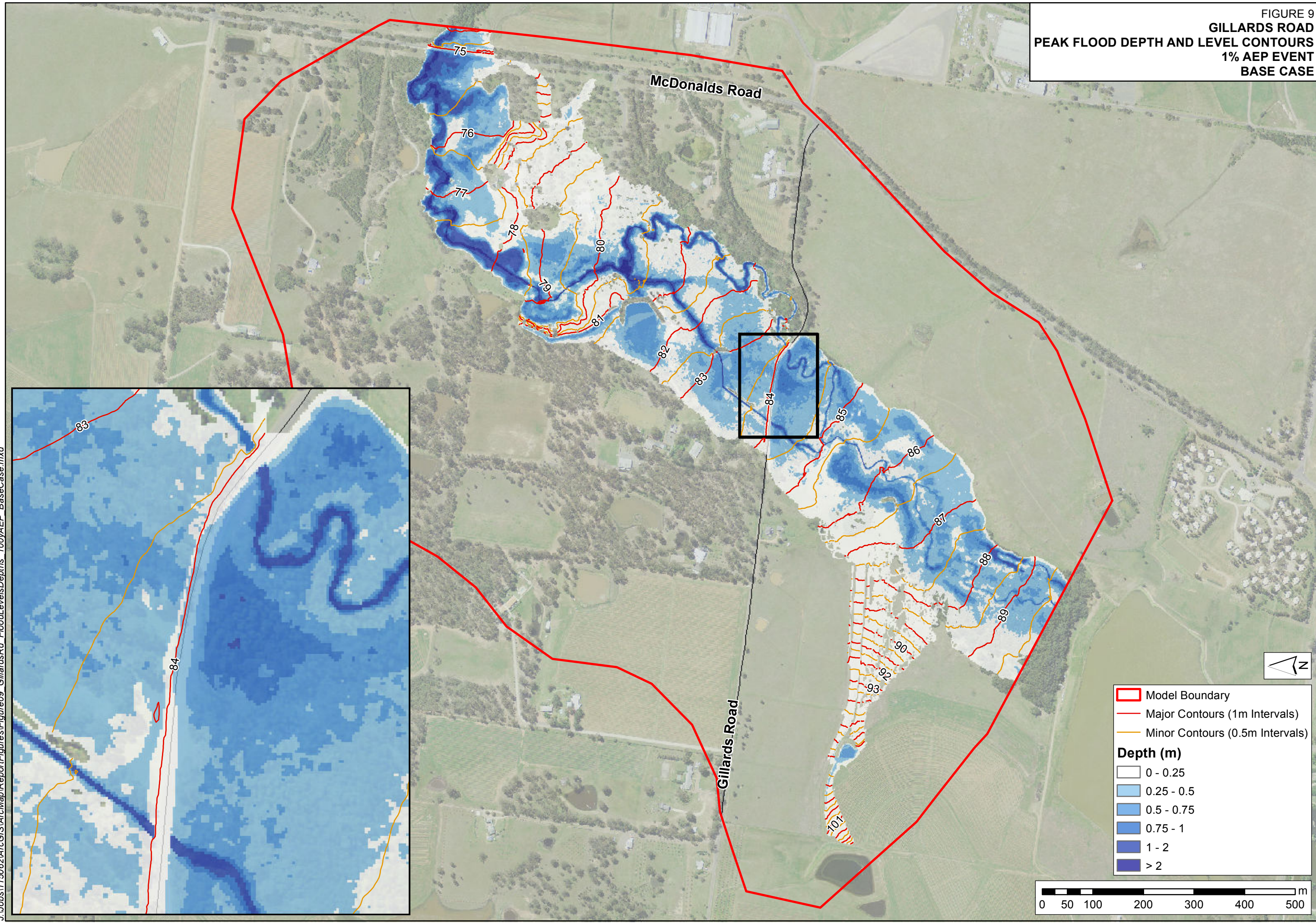


FIGURE 10
GILLARDS ROAD
AIDR FLOOD HAZARD CATEGORIES
10% AEP EVENT
BASE CASE

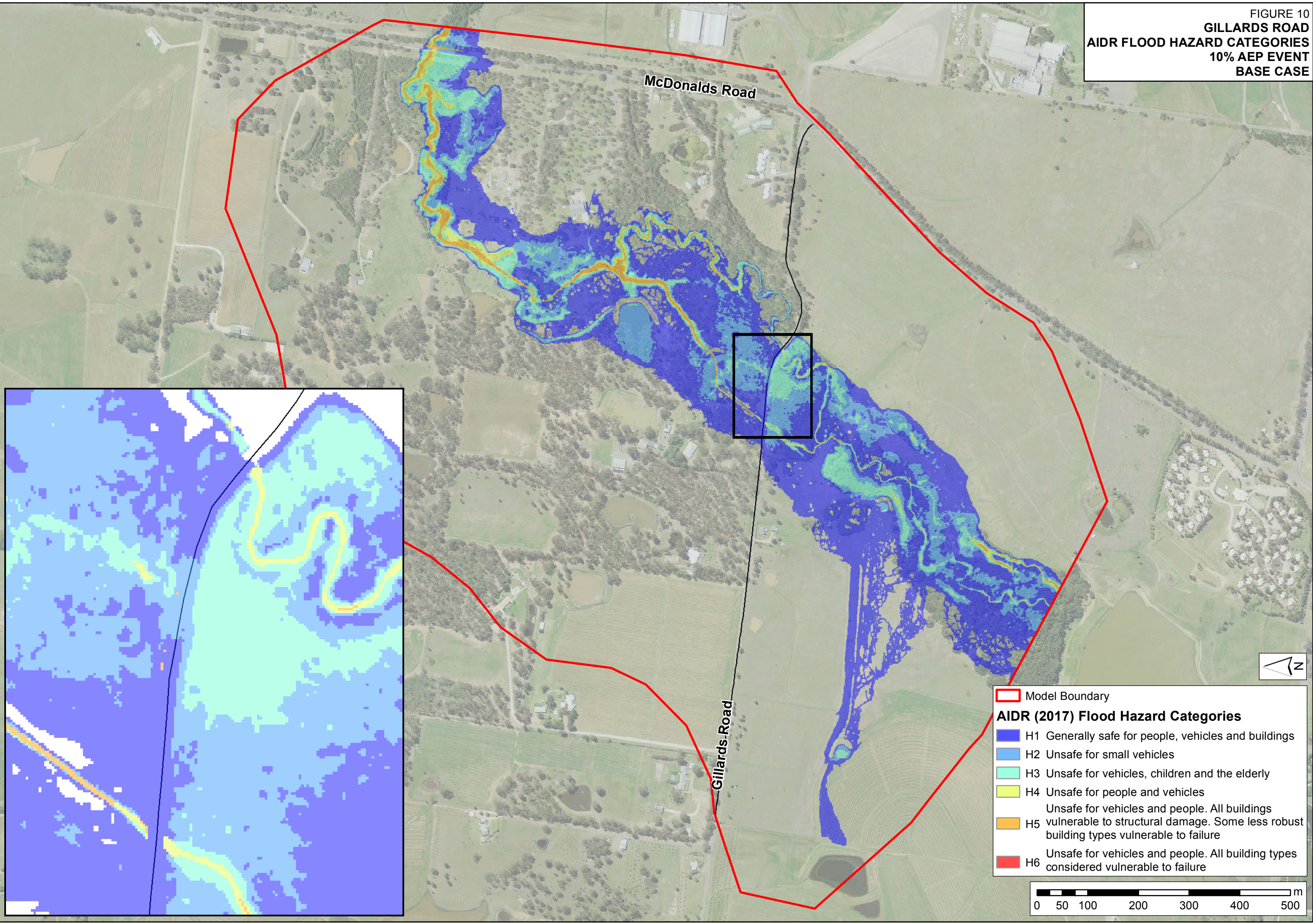


FIGURE 11
GILLARDS ROAD
AIDR FLOOD HAZARD CATEGORIES
1% AEP EVENT
BASE CASE

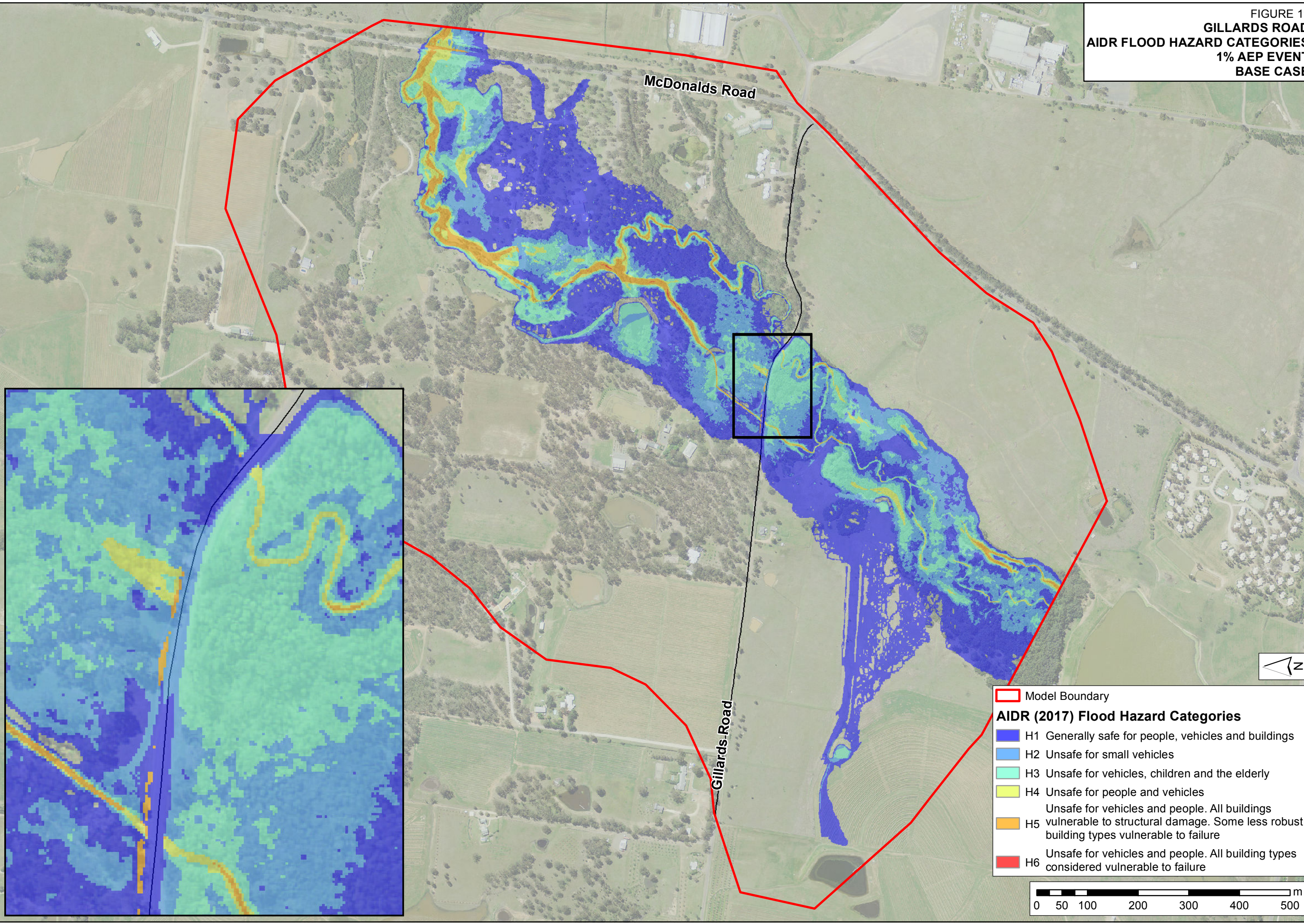


FIGURE 12
GILLARDS ROAD
CULVERT UPGRADE ASSUMPTIONS

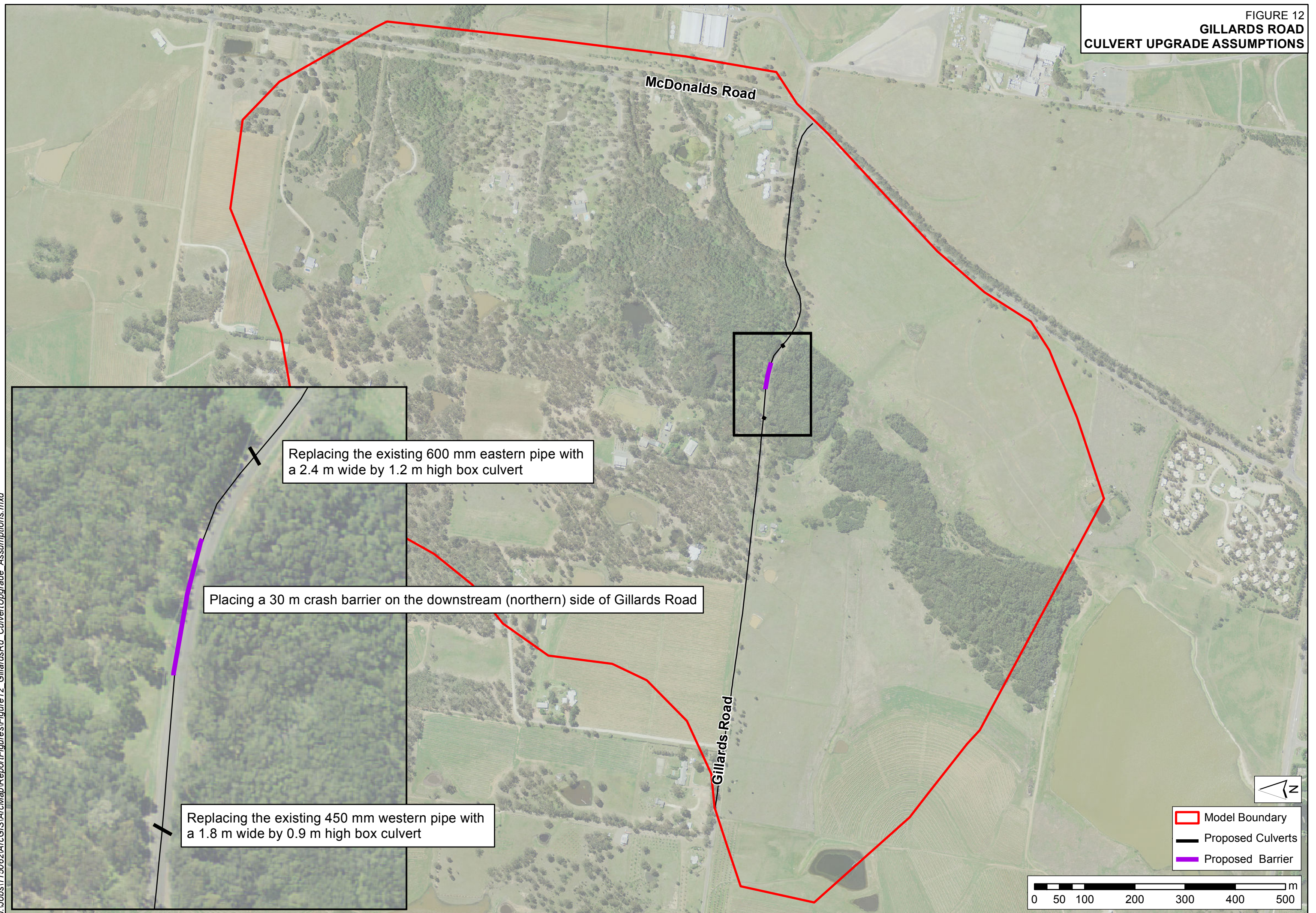


FIGURE 13
GILLARDS ROAD
AIDR FLOOD HAZARD CATEGORIES
10% AEP EVENT
PROPOSED CASE

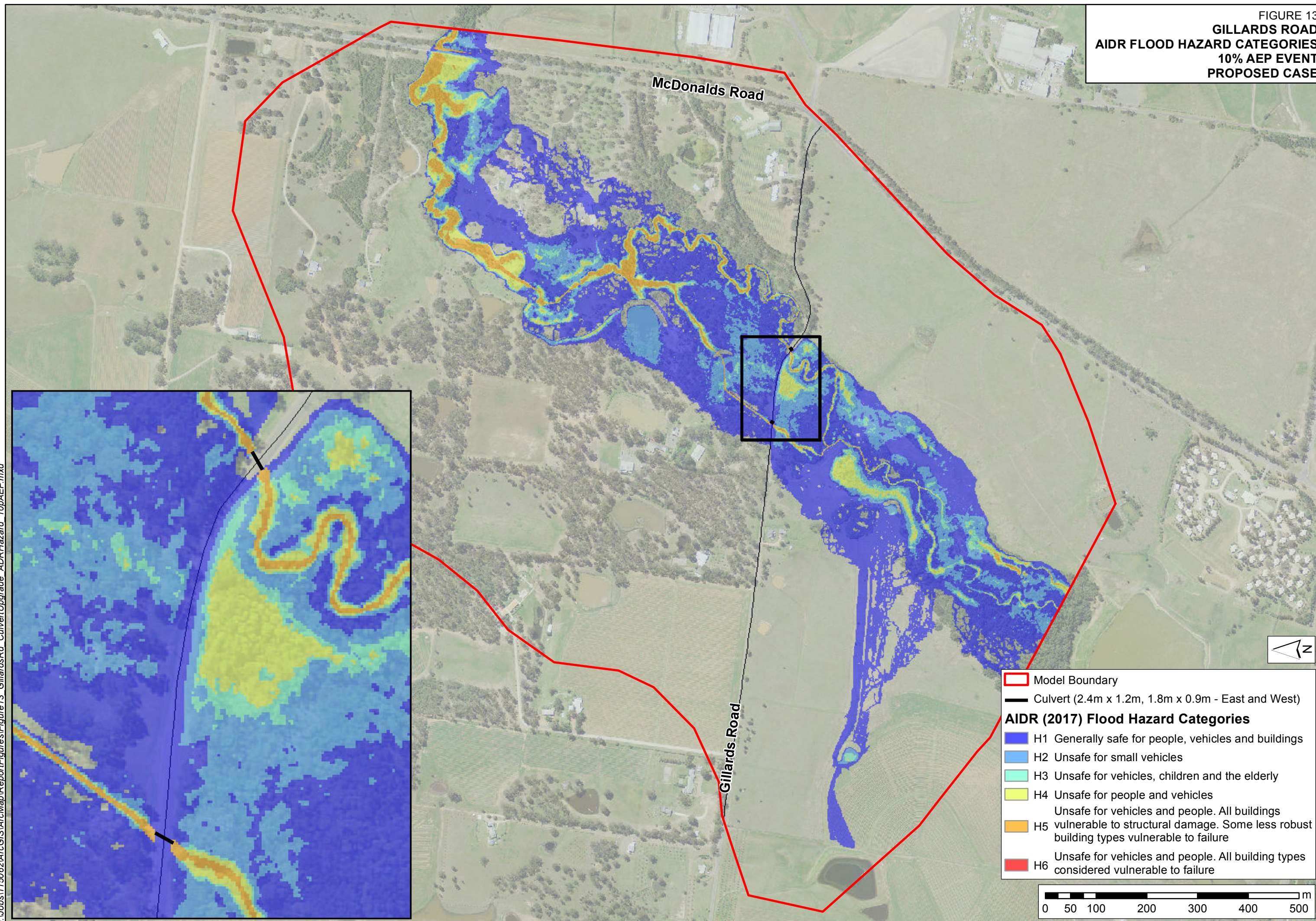
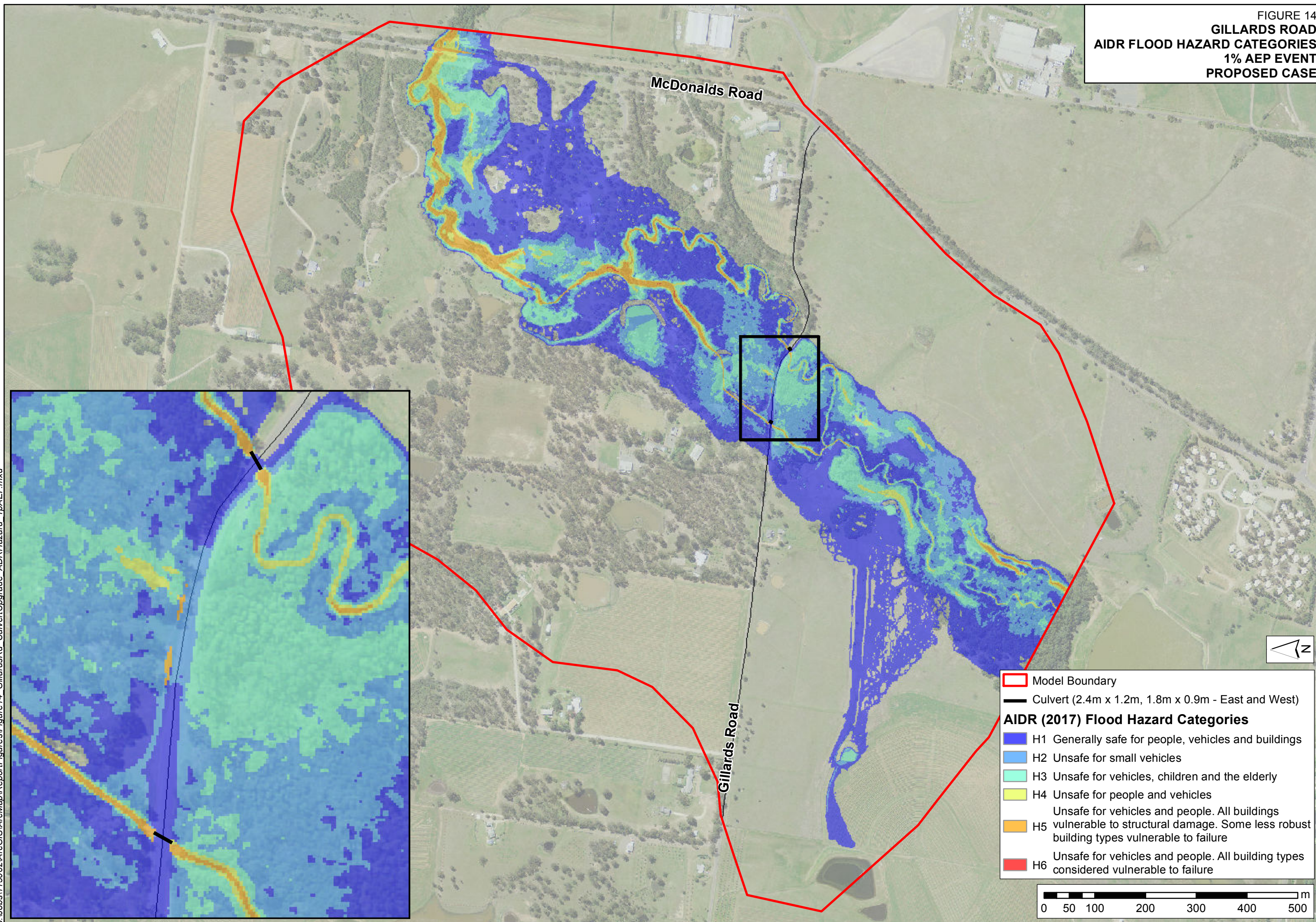


FIGURE 14
GILLARDS ROAD
AIDR FLOOD HAZARD CATEGORIES
1% AEP EVENT
PROPOSED CASE



APPENDIX A. FLOOD ACTION PLAN

A.1. Prepare – During Normal Daily Operations

ACTION	WHO	WHEN
Review and maintain this flood emergency management plan.	Site Manager	Conduct a review of plan after any flooding, or annually otherwise. Ensure contact numbers are up-to-date (Part A.5)
Prepare Emergency Kits which includes spare batteries, torch, first aid kit, emergency contact numbers, a copy of the Flood Action Plan and other relevant emergency items. Keep sufficient numbers of kits at the reception/function building, and at the accommodation building, to service all staff and guests.	Site Manager	Check and replenish annually and after any flooding.
Display the Flood Evacuation poster, flood road safety posters, and this Flood Action Plan in a prominent location in the reception foyer, visible to all staff and visitors and in good condition. Prepare multi-lingual versions of the information to cater for the requirements of non-English-speaking visitors.	Site Manager	Ongoing
Keep a copy of the Flood Evacuation poster and flood road safety posters, in the information books in each room.	Site Manager Housekeeping staff	Ongoing
Maintain signs warning of flood risk for creek crossing on access driveway.	Site Manager	Ongoing
Identify alternative evacuation routes for critical evacuations during periods of flood isolation (e.g. helicopter or access tracks through neighbouring properties), and maintain a list of any contact details required for alternative access.	Site Manager	Ongoing
Inform staff and arriving visitors of the risks that flooding can pose to them and the dangers of walking or driving through floodwaters.	Site Manager Reception Staff	Train new staff on arrival, maintain training of existing staff, to inform about flood risks and make them aware of the contents of this plan.
Develop a strategy for operational response of individual staff, and designate responsibilities, in relation to the response actions required during flooding..	Site Manager	Ongoing
Be aware of forecast rainfall and monitor the Bureau of Meteorology website for Severe Storm Warnings in the region.	Site Manager	Ongoing
Maintain list of people to be contacted in case of flood.	Administrative Staff	Annual review (or following a flood) to ensure contacts are up to date.

A.2. Respond – Flooding Likely or Imminent

Triggers:

- The BoM issuing a Severe Weather Warning or Severe Thunderstorm Warning for the Hunter / Central Coast regions indicating possible flash flooding <http://www.bom.gov.au/nsw/warnings/> OR
- Cessnock Council issues flood warnings for any of the catchments covered by a Flood Warning Service
- Heavy rainfall in local area or at site

ACTION	WHO	WHEN
Notify Staff and Customers: Advise all staff and visitors on site of the possibility of flooding.	Administrative Staff; Site Manager	As appropriate after BoM Severe Weather Warning or Severe Thunderstorm warning is issued in conjunction with available rain radar information on the BoM web site.
Observe: Maintain observation of rainfall conditions on site, or any visible flooding within the site, and be prepared to cease normal operations.	Site Manager	When heavy rainfall is occurring at site
Prepare: Advise expected arrivals or departing visitors of the potential risks of flooding on roadways, preferably via direct personal communication, as well as on the website.	Staff and visitors.	As appropriate after BoM Severe Weather Warning or Severe Thunderstorm warning is issued in conjunction with available rain radar information and observations of flooding.

A.3. Respond – During Flooding

Triggers:

- Visible flooding within the site or reported flooding on Gillards Road; OR
- Unusually heavy rainfall on site.

ACTION	WHO
Cease normal operations on site and post staff at entry/exit points to community centre building to advise customers that: • Flooding is occurring and may get worse; • Do not walk/drive through floodwater; • Move to the nearest building and prepare to move to the upper level of the building if flooding continues to rise. Under no circumstances are staff or visitors to drive through floodwaters at any depth.	All Staff All staff and visitors
Evacuate in place: All people on site to proceed to buildings on high ground and remain inside for duration of flooding unless otherwise advised by emergency services personnel.	All staff and visitors
Evacuate off-site via alternative access routes in case of medical emergency.	
Notify the SES that the flood action plan is being implemented, and of the number of staff and visitors that may be isolated.	
Follow advice of emergency services.	All staff and visitors
Monitor flooding visually and from available online sources (BoM, news sources, social media etc.)	All staff and visitors

NEVER DRIVE, RIDE OR WALK THROUGH FLOODWATER

See A.5 below for Emergency Contacts

A.4. Recover – After Flooding Recedes

Triggers:

- After rainfall has ceased AND
- Floodwaters have receded from all roads.

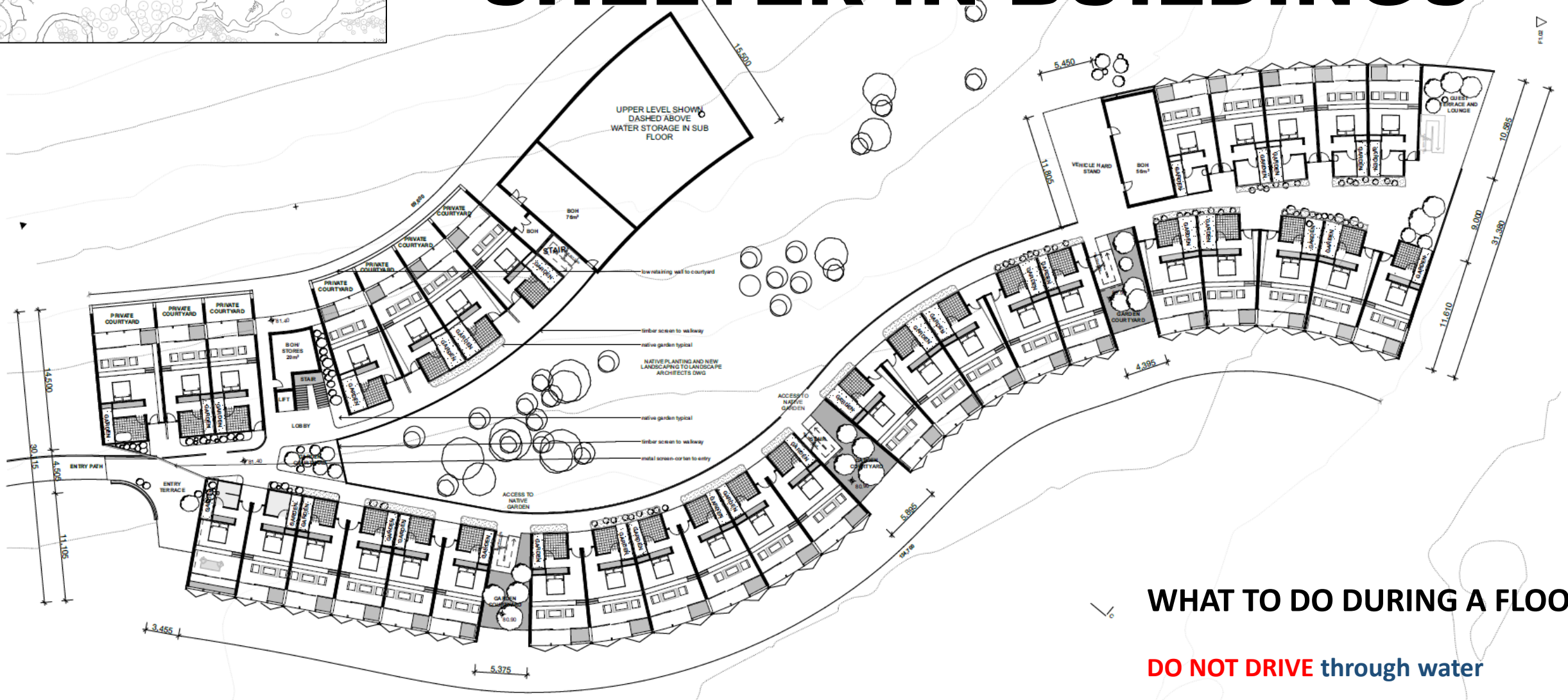
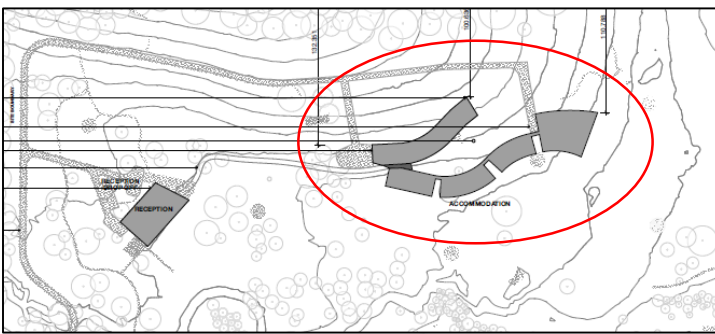
ACTION	WHO	WHEN
Ascertain the safety and whereabouts of all staff and visitors.	Site Manager	After flooding risk has subsided.
Before resuming operations, undertake an OH&S risk assessment and identify any hazards that have been created, particularly with regards to utilities (electricity, gas, water, sewage etc.) and damage to the site.	Site Manager	After flooding risk has subsided.
Take photos of water marks and damage. Contact insurer for assessment if necessary.	Staff as appropriate.	Before operations resume.
Assess whether clean-up or repair operations are required and enact clean-up plan where safe to do so.	Staff as appropriate according to training and relevant expertise.	Before operations resume.
Resume normal site operations.	Site Manager	Once the OH&S risk assessment is complete and it is deemed safe to do so.
Maintain observations of weather conditions and news in case flooding resumes.	Site Manager	Ongoing
Restock Emergency Kit	Administrative staff	Following clean-up
Review flood actions and debrief with staff, amend Flood Action Plan where necessary. Maintain review records (see Appendix B).	Site Manager	Following resumption of operations
Evaluate storage procedures and revise as necessary.	Site Manager	Following resumption of operations
Notify emergency services and Council of any observed damage to local roads or drainage infrastructure.		Following resumption of operations

A.5. Emergency Contacts

To be completed and maintained by Site Manager

ORGANISATION/POSITION	NAME	PHONE NUMBER
Ambulance/ Police/ Fire	n/a	000
SES	n/a	132 500 www.ses.nsw.gov.au
Site Manager		
Council Operations Manager		
Water and Sewage		
Electricity		
Gas		

IN CASE OF FLOODING SHELTER IN BUILDINGS



WHAT TO DO DURING A FLOOD:

DO NOT DRIVE through water

Go to the **NEAREST BUILDING**

WAIT for flooding to recede

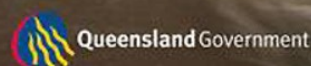
FOLLOW advice of emergency services and the site manager

NEVER DRIVE, RIDE OR WALK THROUGH FLOOD WATER

If it's flooded, forget it.

Just a small amount of floodwater can wash your vehicle away.

www.fire.qld.gov.au/swiftwater



<http://15tofloat.com.au/>

**IT CAN TAKE
JUST 15_{CM} TO
FLOAT**



APPENDIX B. FLOOD ACTION PLAN REVIEW REGISTER

This Flood Action Plan is to be reviewed at least annually, as well as following flood events and when circumstances change. Regular reviews are required to ensure the Plan works as it should, and to account for any change in risks, key personnel and contact details.

Details of the review are to be recorded in the table below:

Review Date	Reason for Review	Any Changes Made (and description if relevant)