ARUP

Health Infrastructure NSW

Blayney Multipurpose Service

Flood Risk Assessment

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1. Introduction

This report has been prepared on behalf of Health Infrastructure NSW to identify the flood risk assessment for the Blayney Multipurpose Service (MPS) facility. The report documents the flood risk modelling undertaken for the proposed MPS development in Blayney, NSW. The proposed development shown in Figure 1-1 comprises:

- Residential aged care
- An Inpatient Unit
- An expanded HealthOne, treatment and inpatient areas
- Landscaped courtyards and gardens
- New parking facilities

Figure 1-1: Blayney MPS Layout

1.1 Purpose

This report has been prepared to undertake a detailed and site-specific risk assessment for the proposed MPS development.

The scope of this assessment included the following:

- Review existing Blayney regional flood model for purpose of use in project.
- Update and refine hydrology model specific to Blayney township up to and including the Probable Maximum Precipitation (PMF) event.
- Update and refine hydraulic model latest available LiDAR survey.
- Hydraulic modelling for both existing and post-development scenarios.
- Review of the flood immunity for the proposed MPS development.
- Inform the emergency response requirements for the facility to manage flood and extreme storm events safety.

1.2 Current Project Status

The project has currently been approved by Heath Infrastructure NSW, with a design completed. A construction contractor has been engaged and is preparing to commence construction on site.

As part of the approval conditions, Health Infrastructure is obliged to undertake a Flood Risk Assessment, and to implement the recommendations of this study.

This study has been commissioned by Health Infrastructure NSW to meet the requirements of this Flood Risk Assessment. This study has included:

- A review of the existing flood assessments for the town of Blayney to document the flood risk at the site.
- Undertaking updated, site-specific modelling based on the accepted Council flood study.
- Assess the flood and overland flow risks to occupants of the Blayney MPS
- Identify the potential for off-site impacts.
- Identify measures that may be incorporated into the approved design to reduce or eliminate the risks to occupants and off-site residents.

1.3 Assumptions and limitations

The following flood risk report has considered the flooding and inundation associated with significant flow paths as documented in the Council flood studies (*Blayney Flood Study* and *Addendum-to-Blayney-flood-study*). As such, it has not considered site drainage as this is managed with the civil design developed by Taylor Consulting Engineers.

This study has considered the hydrologic and hydraulic factors with overland flows. Structural design, compliance with the National Construction Code, architecture and building details are considered separately by others.

2. Background Information

To support the development for a site-specific risk assessment, a range of data sources were considered. These are outlined in the following section.

2.1 Blayney Flood Study (Jacobs, 2015)

The objective of the Blayney Flood Study was to define the riverine flood behaviour of the Belubula River and Abattoir Creek as well as the overland flood behaviour in Blayney and their possible combined effects of the town area of Blayney. The study produced information on flood levels, velocities and flows for a full range of riverine and overland flood events under existing catchment conditions. These results supported the identification of possible management options within the Floodplain Risk Management Study and development of a draft Risk Management Plan for Council's consideration.

Peak flood depths and levels are for the site are shown in Figure 2-1, Figure 2-2, and Figure 2-3. These results indicate that the town of Blayney, including the Blayney MPS site, is subject to overland flows for a range of events, including floods as frequent as the 20% AEP flood. The provided results indicate that depths of up to 0.2 m could traverse the site in the 1% AEP storm event, and depths of up to 1 m could be present in a PMF.

However, this study is based on the ARR 1987 hydrology, and has been superseded by the Addendum-to-Blayney-flood-study.

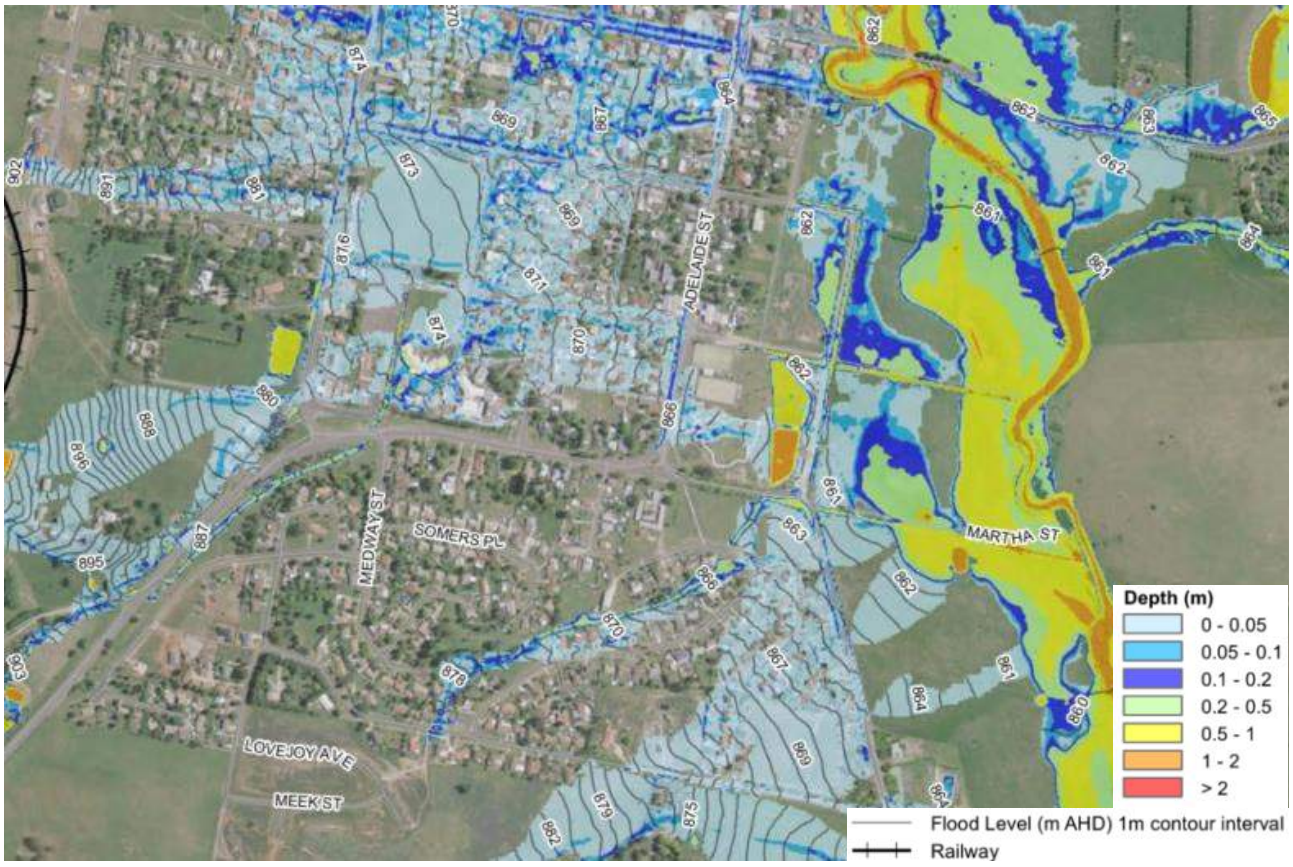

Figure 2-1: 20% AEP Flood Depths and Levels (Jacobs, 2015)

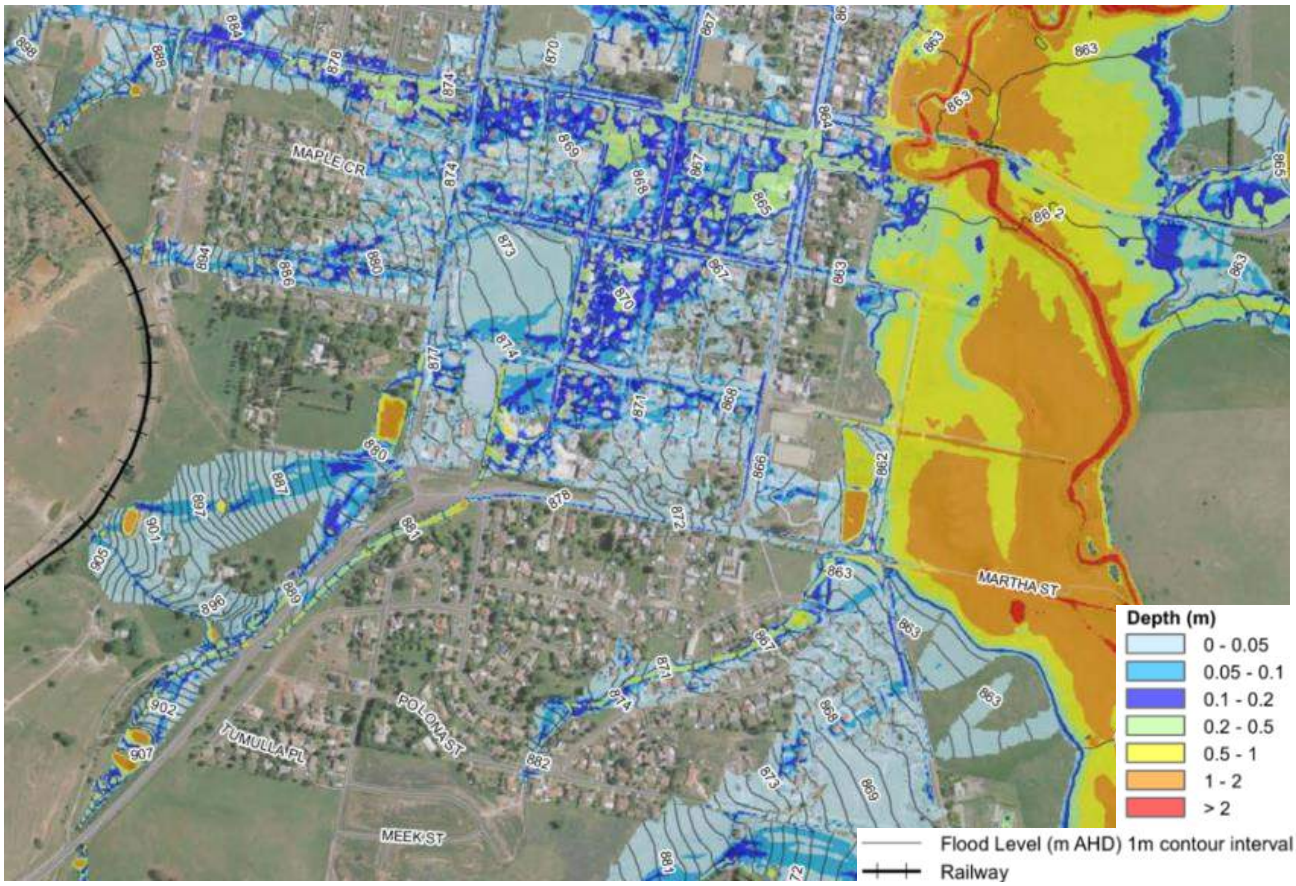

Figure 2-2: 1% AEP Flood Depths and Levels (Jacobs, 2015)

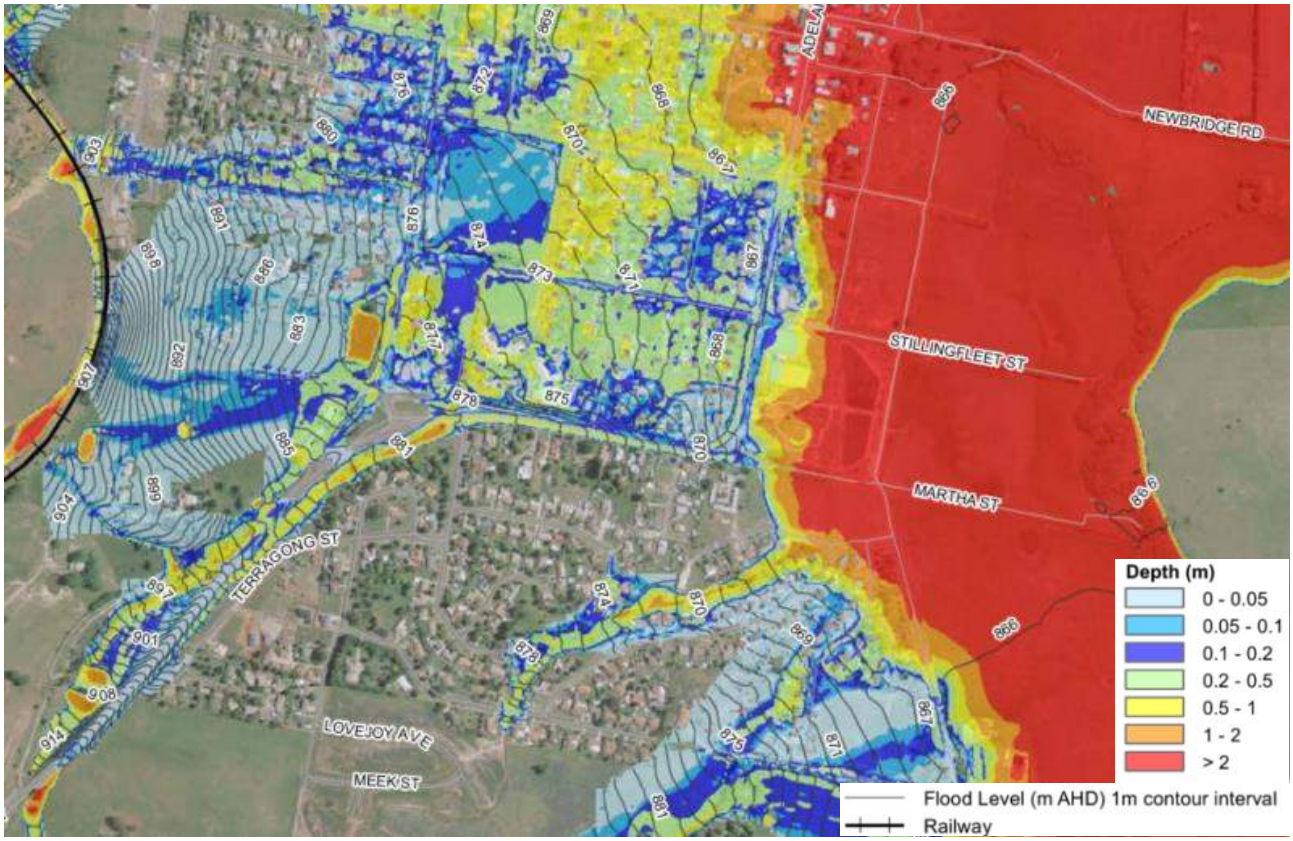

Figure 2-3: PMF Flood Depths and Levels (Jacobs, 2015)

2.2 Addendum-to-Blayney-flood-study (Storm Consulting, 2022)

The addendum flood study is an extension of the original Blayney (Town) Flood Study (Jacobs, 2015). The hydrologic and hydraulic models prepared by Jacobs were updated to be in accordance with ARR19, and as such this study has been adopted as a basis for the modelling undertaken as part of this assessment.

Flood depths are outlined in Figure 2-4, while the provisional flood hazard (as defined in the NSW Floodplain Development Manual, DIPNR, 2005), is shown in Figure 2-5. These demonstrate that the Blayney MPS site is located outside the floodplain associated with the Belubula River. The provisional flood hazard is noted as being low throughout the town, with the exception of the Belubula River and the drainage swales (for example, the swale running along the Mid-Western Highway. This study also identified that this site was outside the extent of local catchment flooding.

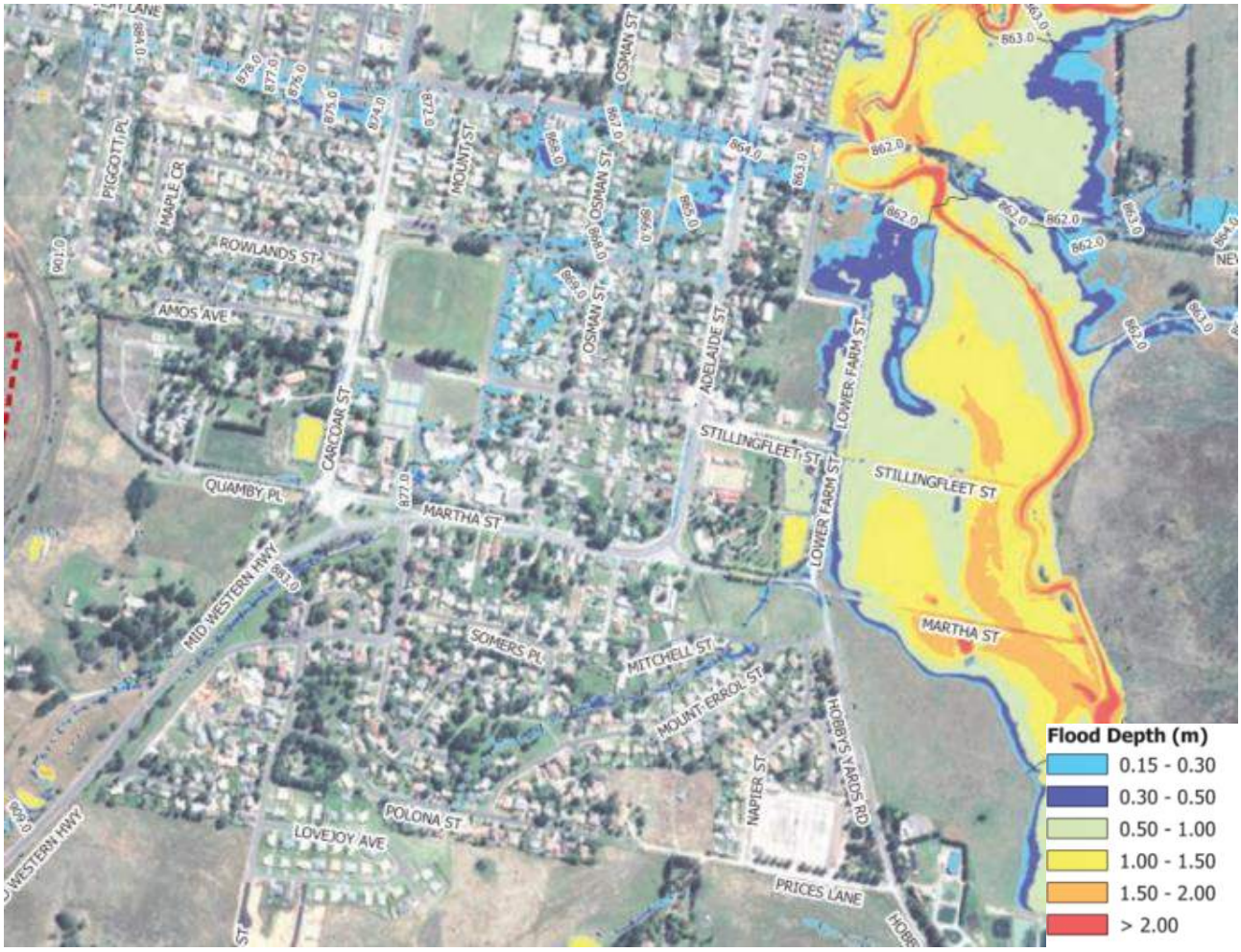

Figure 2-4 1% AEP Flood Depth (Storm Consulting, 2022)

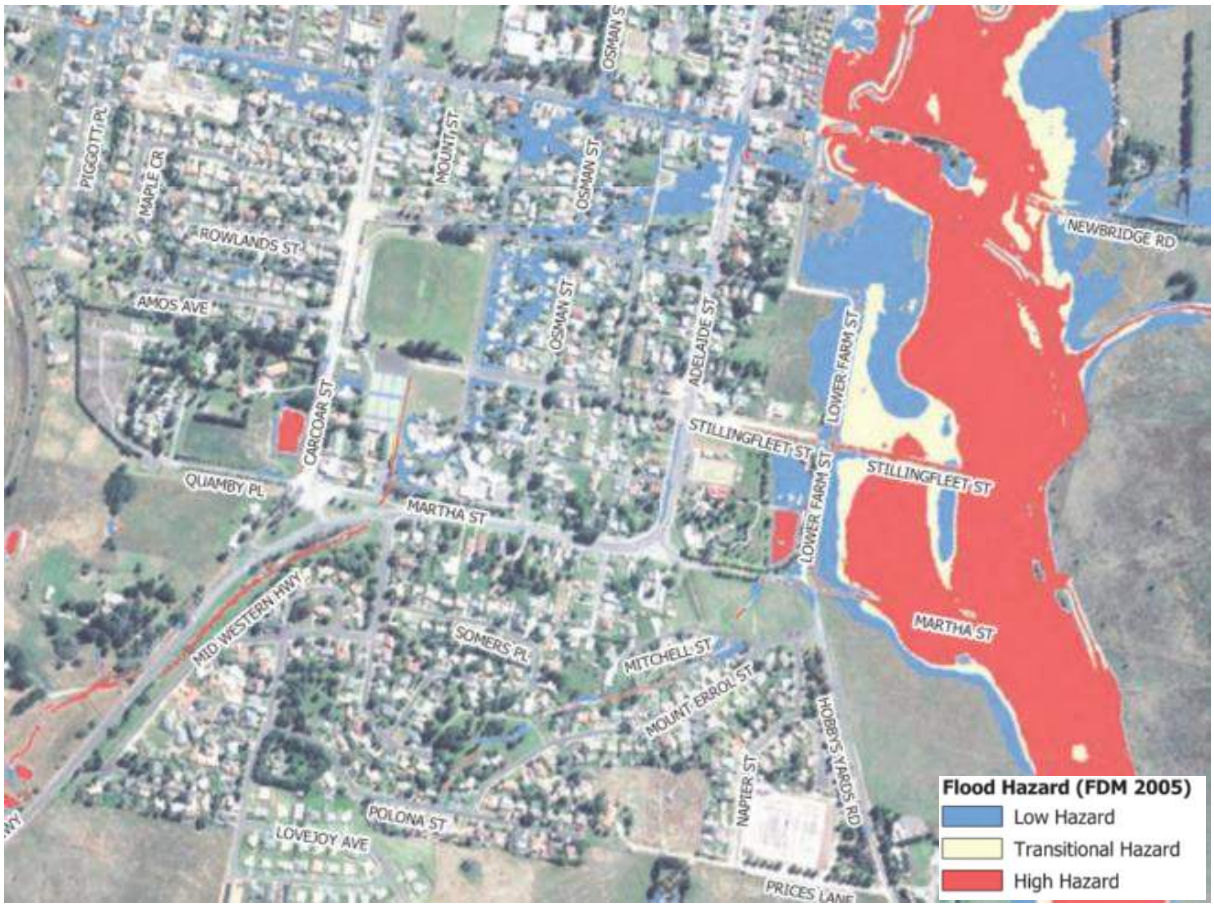

Figure 2-5 1% AEP Provisional Flood Hazard (Storm Consulting, 2022).

2.3 The Estimation of Probable Maximum Precipitation in Australia: Generalised Short-Duration Method (Bureau of Meteorology, 2003)

To assess the risks associated with extreme events such as the Probable Maximum Flood (PMF), the Bureau of Meteorology guide *The Estimation of Probable Maximum Precipitation in Australia: Generalised Short-Duration Method* (2003) was consulted. This guide outlines the procedure for apply a Probable Maximum Precipitation rainfall events, and generating PMF event.

Notably, there is a requirement that the rainfall be centred on the applicable catchment (refer Figure 2-6). In this case the PMF would be centred on the Mid Western Highway south-west of the site. The application of the PMP is outlined in Section 5.1.1.

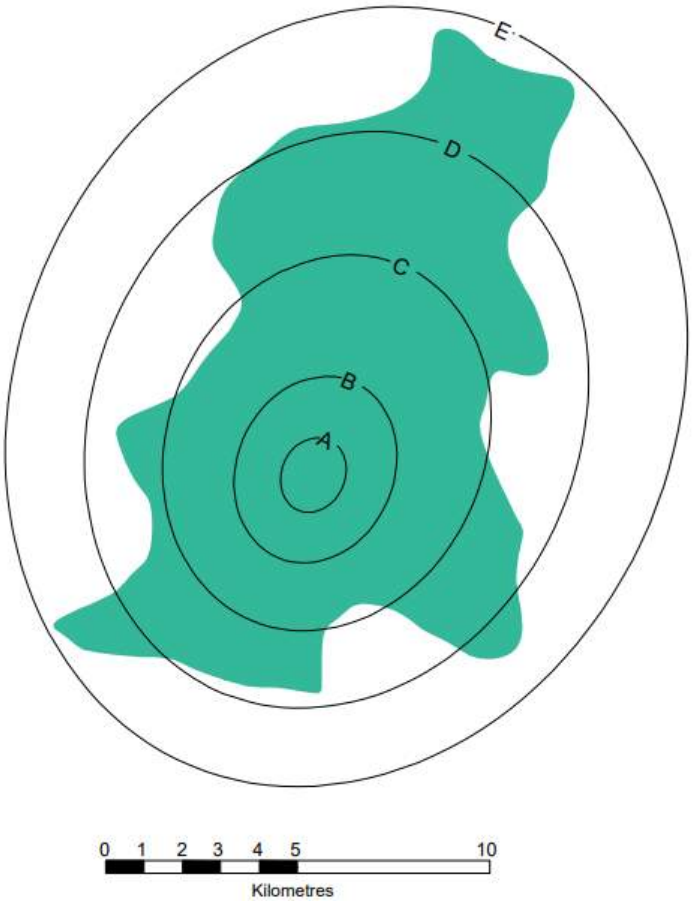

Figure 2-6 Spatial application of the PMP, with the rainfall centred on the contributing catchment (BoM, 2003).

2.4 LiDAR and Topographic data

The Blayney Flood Study have been based on LiDAR captured by Land and Property Information (LPI) on 5 February 2009. However, a revised data set was available from Spatial Services NSW, captured on 11 April 2017. This data set provides greater resolution of key features such as the drainage swales. This data has a notional resolution of 1 m, and a horizonal spatial accuracy of +/-0.80 (@95% confidence interval), and vertical accuracy of +/-0.30 (@95% confidence interval).

2.5 Blayney Health Service Emergency Management Plan & Standing Operating Procedures (Western NSW Local Health District, 2021)

The Blayney Health Service Emergency Management Plan & Standing Operating Procedures (Western NSW Local Health District, 2021) outlines the procedures to response to a range of emergency events that may be encountered at the facility. The response to flooding is outlined in under the *Code Orange* procedures (referred to here as *the plan*). Typically, a three-stage evacuation procedure will be employed (Table 2-1), however in some emergencies it may be necessary to escalate directly to a Stage 3.

The plan has identified an alternative (safer) refuge location as being the Lee Hostel, Queen Street Blayney. Alternative medical facilities which may be used for evacuation include Canowindra (67 km away) and Cowra (68 km away).

Table 2-1 Typical three-stage evacuation process

Stage One	Stage Two	Stage Three
Removal of people from Immediate Danger	**Removal of people to another compartment or area**	**Complete evacuation of the building and/or site**
Depending on the severity of the situation – evacuation may be into another room within the ward or the facility	Removal to another compartment protected by fire/smoke doors or a safer area Severity of the situation may warrant further evacuation – people should be moved to a safer area	Should the emergency necessitate complete evacuation of the building – all staff will be required to assist in the movement and care of the patients/ residents

3. Planning Requirements

3.1 Local Environment Plan 2012

The Local Environment Plan (LEP) documents the overarching planning requirements that apply to the site. Specifically relevant to the site are the land zoning provisions, and the food planning requirements.

3.1.1 Land Zoning

The LEP documents the land zoning that applies to this Local Government Are a (LGA). This is outlined in Figure 3-1. Based o his mapping, the land is zoned R1 (General Residential).

Figure 3-1 Land zoning as outlined in the LEP 2012

3.1.2 Flood Planning

Overarching floodplain management objectives are contained in the Blayney Local Environment Plan 2012:

5.21 Flood planning

1. *The objectives of this clause are as follows—*
   a. *to minimise the flood risk to life and property associated with the use of land,*
   b. *to allow development on land that is compatible with the flood function and behaviour on the land, taking into account projected changes as a result of climate change,*
   c. *to avoid adverse or cumulative impacts on flood behaviour and the environment,*
   d. *to enable the safe occupation and efficient evacuation of people in the event of a flood.*
2. *Development consent must not be granted to development on land the consent authority considers to be within the flood planning area unless the consent authority is satisfied the development—*
   a. *is compatible with the flood function and behaviour on the land, and*
   b. *will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties, and*

c. *will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood, and*

d. *incorporates appropriate measures to manage risk to life in the event of a flood, and*

e. *will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.*

3. *(3) In deciding whether to grant development consent on land to which this clause applies, the consent authority must consider the following matters—*

   a. *the impact of the development on projected changes to flood behaviour as a result of climate change,*

   b. *the intended design and scale of buildings resulting from the development,*

   c. *whether the development incorporates measures to minimise the risk to life and ensure the safe evacuation of people in the event of a flood,*

   d. *the potential to modify, relocate or remove buildings resulting from development if the surrounding area is impacted by flooding or coastal erosion.*

4. *(4) A word or expression used in this clause has the same meaning as it has in the Considering Flooding in Land Use Planning Guideline unless it is otherwise defined in this clause.*

5. *(5) In this clause—*

   ***Considering Flooding in Land Use Planning Guideline** means the Considering Flooding in Land Use Planning Guideline published on the Department's website on 14 July 2021.*

   ***flood planning area** has the same meaning as it has in the Flood Risk Management Manual.*

   ***Flood Risk Management Manual** means the Flood Risk Management Manual, ISBN 978-1-923076-17-4, published by the NSW Government in June 2023.*

5.22 Special flood considerations

[Not adopted]

3.2 Blayney Development Control Plan 2018

The Blayney Development Control Plan 2018 includes a section on Environmental Hazards which addresses both stormwater and flooding.

3.2.1 Stormwater

The Blayney DCP outlined a number of objectives and prescriptive requirements with respect to stormwater. The prescriptive requirements are applied based on the land zoning outlined in the LEP. These cover stormwater conveyance, water quality and soil and water management.

For R1 (General Residential), the prescriptive requirements are applicable stormwater management and overland flow management on this site are outlined in Table 3-1.

Table 3-1 Blayney CDP 2018 Stormwater requirements

Clause	Requirement	Where addressed
1	If a Soil and Water Management Plan is required by Council's Development and Building Guide then it must demonstrate / address the matters set out below (where relevant).	To be addressed in the construction phase.
2	For all areas (both urban and rural) development must ensure stormwater management: a) Is in accordance with Council's Guidelines for Engineering Works (as amended);	Overland flows are discussed in Section 5.4 below. Water quality has been assessed separately.

Clause	Requirement	Where addressed
	b) Does not result in any concentration of flows to adjoining properties; c) Is designed to optimise the interception, retention and removal of water-borne pollutants and sediment prior to their discharge to receiving waters.	
3	For urban areas (Zone R1, RU5, B2, B5, B6, IN1 & IN2 and Zone R5 Large Lot Residential attached to towns/villages where lots < 1 ha in area) development must ensure stormwater management: a) Is designed to flow to Council's stormwater system, inter-allotment drainage easement, or other legal point of discharge; b) Where there is likely to be significant site coverage by buildings and hardstand areas, that the post-development run-off from the development site: i) will not exceed the run-off from the site during its pre-developed state; ii) Does not significantly alter pre-development stormwater patterns and flow regimes or cause unacceptable environmental damage in existing watercourses or receiving waters; c) For development of larger sites where the downstream hydraulic capacity of one or more components in a drainage system is inadequate for the design flow and/or where economically feasible, Council may require the design to incorporate some or all of the following: i) Onsite stormwater retention and/or detention devices; ii) Water quality treatment devices; and or iii) Water re-use, to manage stormwater on the site and improve water quality outcomes when discharging to the natural environment in accordance with recognised Water Sensitive Urban Design principles.	The land is zoned R1 (General Residential, and as such these provisions can be expected to apply. Overland flows are documented in Section 5.4 below.

3.2.2 Flooding

However, the controls relating to flooding are to be added at a later date. As such, the applicable controls will default back to the principals outline in the LEP, and the guidance provide in the NSW Flood Risk Management Manual (Department of Planning and Environment, 2023).

3.3 Guidelines for Engineering Works (WBC Strategic Alliance, 2009)

Details around the stormwater management requirements for the LGA are documented in the Guidelines for Engineering Works (WBC Strategic Alliance, 2009), and included specific requirements for both flooding and stormwater.

With respect to flooding, the general design requirement is to be based around the 1% Annual Exceedance Probability (AEP) flood event.

Stormwater drainage systems are to use the major/minor approach. In this approach, underground pipes and associated pits are to be used to drain nascence (frequent) flows, while overland flow paths are to be used to convey the rarer events in a safe and efficient manner. Major system drainage designs shall aim to control flood flows so that the severity of flooding downstream, and upstream afflux, is not increased.

Design flows for the stormwater and overland flow management system are outlined in Table 3-2. For this site, the 20% AEP event is most relevant to the stormwater design.

Table 3-2Design Annual Exceedance Probabilities (WBC Strategic Alliance, 2009)

Land Use	Annual Exceedance Probability (AEP)
Road Drainage - Minor (Piped) System	
Arterial Roads (Cross Drainage)	2%
Rural & Rural Residential (Cross Drainage)	20%
Urban Residential	20%
Sag Point (must have a defined 1% AEP overflow route)	20%
Commercial	20%
Floodway 'low-flow' system	100%
Interallotment Drainage	20%
Trunk Drainage	1%

3.4 NSW Flood Risk Management Manual (Department of Planning and Environment, 2023)

The policy as outlined in this document sets the direction for floodplain risk management in New South Wales. This manual and its associated toolkit support the implementation of the policy through the combined efforts of all levels of government.

As outlined in the guide, the primary objective of this policy is to reduce the impacts of flooding on communities and individual owners and occupiers of flood prone property, and reduce private and public losses resulting from floods. Achieving these outcomes includes:

- *using a merit-based approach in preparing and implementing flood risk management (FRM) plans to address riverine and local overland flooding*
- *reducing the impact of flooding and flood liability on existing developed areas identified in FRM plans through flood mitigation works and measures including ongoing emergency management (EM) measures, the raising of houses where appropriate and by development controls*
- *adopting a merit-based approach for all development decisions in the floodplain, taking into account social, economic and ecological factors, as well as flooding considerations*
- *limiting the potential for flood losses in all areas proposed for development or redevelopment by the application of ecologically sensitive planning and development controls.*

It is noted that this policy recognises that flood prone land is a valuable resource, and that that the development of flood prone land should be the subject of careful assessment which incorporates consideration of local circumstances. However, this manual does not outline the requirements for the development of flood prone land as these requirements are provided by the relevant planning legislation and policies (such as the LEP – refer Section 3.1).

3.5 Update on addressing flood risk in planning decisions (PS 24-001, NSW Government 2024)

This circular provides advice on a package of changes regarding how land use planning considers flooding and flood-related constraints. It is intended to provide specific direction on incorporating the flood planning policy as outlined in the NSW Flood Risk Management Manual (Department of Planning and Environment, 2023). This circular advises that councils and other authorities apply a risk-based approach to the assessment of flood-affected proposals. This risk-based approach should take into account the flood risk profile of each proposal which considers the flood characteristics for the location, including:

- *whether the proposal is in a high-risk catchment*
- *the location of the proposal in relation to flood behaviour and constraints including:*
  - *floodway, flood storage area or flood fringe area*
  - *the hazard vulnerability classification of the land*
  - *frequency of inundation*
- *whether the proposal provides for safe occupation and efficient and effective evacuation in flood events and how it is to be achieved*
- *in high-risk catchments, whether the proposal is likely to result in a significant increase to the risk to life in other parts of the catchment in a PMF flood event*
- *any known evacuation constraints such as the flood emergency response classification for the area and available warning times (including rate of rise and when the evacuation route is cut off by floodwater)*
- *whether the proposal is for a sensitive or hazardous land use, or other higher risk uses and what mitigation strategies (if any) are proposed to reduce any identified risks*
- *whether there may be adverse flooding impacts on surrounding properties*
- *potential impacts of cut and fill and other building works on flood behaviour*
- *ability of proposed development to withstand flood impacts.*

3.6 NSW Health Infrastructure Requirements

NSW Health Infrastructure, as part of a statutory body, have building requirements separate to those outlined for the LGA. These guidelines are developed to be consistent with the broader NSW Flood Prone Land Policy, including PS 24-001). These requirements indicate that for this proposal, immunity from the 1% AEP flood is required.

3.7 Planning Approval Conditions

The conditions of approval with respect to flooding that apply to this development are outlined in Condition 20 of the REF Decision Statement). The are:

- *It shall include assessment of any off-site impacts of development, including potential impacts on the neighbouring Lee Roshana Aged Care Facility.*

  (iii) structural capacity of proposed buildings to withstand floodwater loads and currents; and

  (iv) potential for environmental pollution from the development in association with flooding.
- *Identify any specific detailed design solutions and operational measures to mitigate flood risk where required, including:*
  - *minimum floor levels for essential plant, clinical facilities and utility connection points;*
  - *appropriate building construction standards including the use of flood compatible building components and the maintenance of structural integrity both during and after a PMF flood event;*
- *consideration of appropriate flood response actions for site attendees during flood events (including vulnerable persons) such as shelter-in-place or evacuation, consideration of potential impacts of site isolation including loss of power, consideration of any evacuation issues during the full range of anticipated flood events, and a decision matrix regarding site evacuation triggers, routes and destinations, as appropriate.*

4. Consultation

During the design development of the facility, Health Infrastructure NSW consulted with a number of external Agencies and stakeholders, including Blayney Shire Council and the SES.

4.1 Blayney Sire Council

Consultation was undertaken with Blayney Sire Council regarding a range of issues, including flooding and stormwater. Council noted that the stormwater management provisions were an improvement over the existing arrangements, and that their current flood study did not indicate the site as being flooded.

4.2 SES

Consultation was undertaken with the NSW State Emergency Service (SES), with a response letter provided on 25 March 2024. The letter outlined their position in response to the proposed development, including:

- Advocate for land use planning in which aged care facilities are situated above the Probable Maximum Flood (PMF) level and are not subject to isolation.
- Note a design condition has been proposed which involves construction of a flood levee/wall to prevent inundation of the site in the PMF. However, in the PMF event, the levee is subject to high hazard floodwaters and associated debris loads. If failure of the levee occurs, this may result in loss of life and/or widespread damage to property.
- Note the site is subject to vehicular isolation from the 20% AEP event.
- Recommend obtaining further information regarding the impact of the proposed design condition on adjacent flood risk in all flood events up to and including the PMF.

The submissions outlined above have been considered as part of this assessment.

5. Flood Modelling

Hydrological and hydraulic models for Blayney Town were developed as part of the Blayney Flood Study (Jacobs, 2015), and updated to current Australian Rainfall and Runoff (ARR) standards in 2022 by Storm Consulting as reported in the Blayney Flood Study Addendum (Storm Consulting, 2022).

Site specific flood modelling has been undertaken in order to determine post-development flood levels on site for a range of flood events and to determine any flood impact in adjacent property as a result of the proposed development. This flood modelling is more detailed and centred on this site so as to provide a complete overview of the flood risk at this site for events up to and including the PMF. It considers overland flows and local stormwater. However, the site is sufficiently elevated above the Belubula River flood plain so as not require consideration of mainstream flooding (other than as a tailwater contribution to the local flood model).

The existing hydrology model (XP-RAFTS) and hydraulic model (TUFLOW) have been refined for use in this assessment as discussed in the following sections.

5.1 Hydrological Modelling

Hydrological modelling was undertaken based on ARR (Australian Rainfall and Runoff) 2019 guidelines using the XP-RAFTS model developed for the Blayney Flood Study (Jacobs, 2015) and updated for the Blayney Flood Study Addendum (Storm Consulting, 2022).

The XP-RAFTS model was adopted for use as is, the major update being inclusion of the 1% AEP + Climate Change and PMP event.

It is noted that an inflow is applied to the XP-RAFTS model at GS 412104, located on the Belubula River upstream of Blayney. The external inflow was sourced from a calibrated and validated RORB model developed as part of the Portfolio Risk Assessment for 24 Dams (Jacobs, 2001). The RORB model was not supplied for use in this project and therefore could not be utilised in the updated calculation of the PMP flows.

5.1.1 PMP Calculation

Completed according to the Estimation of Probable Maximum Precipitation in Australia: Generalised Short-Duration Method (BoM, 2003) guidelines.

The PMP rainfall depth GSDM calculation focusses primarily on the project site and contributing catchments within Blayney Town. For the purpose of this assessment, it has been assumed that the relevant catchment is within ellipse A.

The input parameters utilised in the GSDM calculation are summarised below:

- Catchment Limit: 100km^2
- Duration Limit: 6 hours
- Terrain Category: Smooth (S)
- Elevation Adjustment Factor (EAF): 1
- Moisture Adjustment Factor (MAF): 0.70

The resultant PMP rainfall depths and design temporal distribution are presented in Table 5-1 and Table 5-2.

Table 5-1: PMP rainfall depth

Time (minutes)	PMP Depth Estimate (mm)
15	162.4
30	235.2
45	297.5
60	345.1
90	394.1
120	439.6
180	493.5
240	539.7
360	615.3

Table 5-2: Design Temporal Distribution of Short Duration PMP (GSDM Calculation Method, BoM 2003)

% of the time	% of PMP
0	0
5	4
10	10
15	18
20	25
25	32
30	39
35	46
40	52
45	59
50	64
55	70
60	75
65	80
70	85
75	89
80	92
85	95
90	97

% of the time	% of PMP
95	99
100	100

5.1.2 Climate Change

A climate change scenario was modelled by adopting a conservative rainfall increase factor of 20.2%, assuming a representative concentration pathway (RCP) 8.5 scenario and extrapolating to the year 2090 based on ARR 2019 datahub.

5.1.3 XP-RAFTS Outputs

The XP-RAFTS model was run for the following events:

- 20% AEP: 25min – 36 hour
- 5% AEP: 25min – 36 hour
- 1% AEP: 25min – 6 hour
- 1% AEP + Climate Change: 25min – 6 hour
- PMF: 15min – 6 hour

The critical duration (maximum) peak flows for each event are presented below in Table 5-3.

Table 5-3: XP-RAFTS Peak flows at the Mid-Western Highway, directly upstream of the project area

AEP (%)	Duration	Peak Flow (m3/s)
20	36 hour	2.2
5	1 hour	3.4
1	2 hour	7.7
1 + CC	2 hour	13.9
PMF	30 min	87.9

5.2 Hydraulic Modelling

Hydraulic modelling was undertaken based on ARR 2019 guidelines using the TUFLOW model developed for the Blayney Flood Study (Jacobs, 2015) and updated for the Blayney Flood Study Addendum (Storm Consulting, 2022). The TUFLOW model was reviewed and updated to ensure it was sufficiently detailed to assess the local flood risk at the project site and inform the flood immunity of the proposed design.

The key model updates include:

- Updated TUFLOW solver from Classic to HPC to reduce model simulation times.
- Incorporated revised LiDAR (2017). This LiDAR gives a greater cross-section to the drains and roadside swales, as well as provides better definition of the surfaces.
- Revised delineation of materials definition in the vicinity of the site
- Revised delineation of the building code layer within the vicinity of the site
- Minor updates to the representation of the drainage 1d-2d connections to better align with the major flowpaths and grid cell size.

The model a summary of the hydraulic model is presented in Table 5-4 with the model setup shown in Appendix A.

Table 5-4: TUFLOW Model Parameters

Parameter	Value
TUFLOW Release	2023-03-AE-iSP-w64
Solver	HPC
Hydrological Approach	XP-RAFTS hydrological flows applied as local (loc.ts1) and total (tot.ts1) hydrographs.
Boundary Conditions	Model extent = 12.2 km^2 Inflows applied to the model domain according to the following: Regional riverine routed hydrographs applied directly to the 1D river network as 1D_BC QT point type boundaries. Local catchment routed hydrographs applied to the 1D river network as 1D_BC QT region type boundaries. Local catchment routed hydrographs applied to the drainage pits within the urban areas of Blayney as 2D_SA Pit type boundaries. Local catchment routed hydrographs applied to the model surface as 2D_SA type boundaries. Belubula River and Abattoir Creek represented in the 1D domain with 1D-2D connection defined as 2d_HX lines. Downstream boundary was defined as a 1d_BC point with a Height Time HQ automated slope boundary.
Grid Size	3m
Terrain	1m LiDAR (2017)
Hydraulic Structures	Transverse culverts and trunk drainage pipes based on survey undertaken by Geolyse Pty Ltd for the 2015 Blayney Flood Study.

5.3 Design Inputs

The following design elements were included in the design conditions TUFLOW model:

- 3D design surface of the finished floor level and civil landscaping elements supplied by NBRS as of 24 August 2024 as shown in Figure 5-1.
- Drainage swale 0.5m deep with 1:1 slopes located along the western boundary of the site as shown in Figure 5-2.
- A civil grading plan developed by Taylor Consulting Engineers (Figure 5-3)

The design conditions model setup shown in Appendix A.

Figure 5-1: Design layout (NBRS, 24 August 2024)

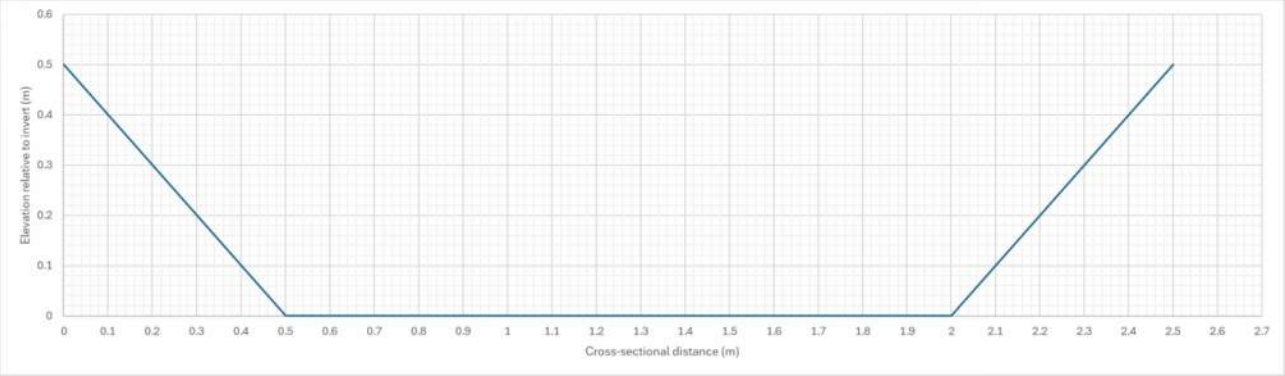

Figure 5-2: Assumed overland flow path dimensions.

Figure 5-3 Civil grading plan developed by Taylor Consulting Engineers (27 September 2024).

5.3.1 Floor Levels

Floor levels of the facility have been adopted based on the design. These are:

- Residential aged care (RAC) wing: 874.85 m AHD
- Health One wing: 874.40 m AHD.
- Generator Room: 874.10 m AHD

5.4 Hydraulic Modelling Results

Mapping for the peak flood depth, level, velocity and hazard is presented in Appendix B and Appendix D.

5.4.1 Existing Conditions

Existing conditions flood modelling results (presented in Appendix B) shows:

- The major transverse culvert beneath the Mid-Western Highway convey the upstream catchment flows north through the existing Oldham Place swale as shown in Figure 5-4.
- The Oldham Place swale is breached in the 5% AEP event with overland flows passing east through the project site.

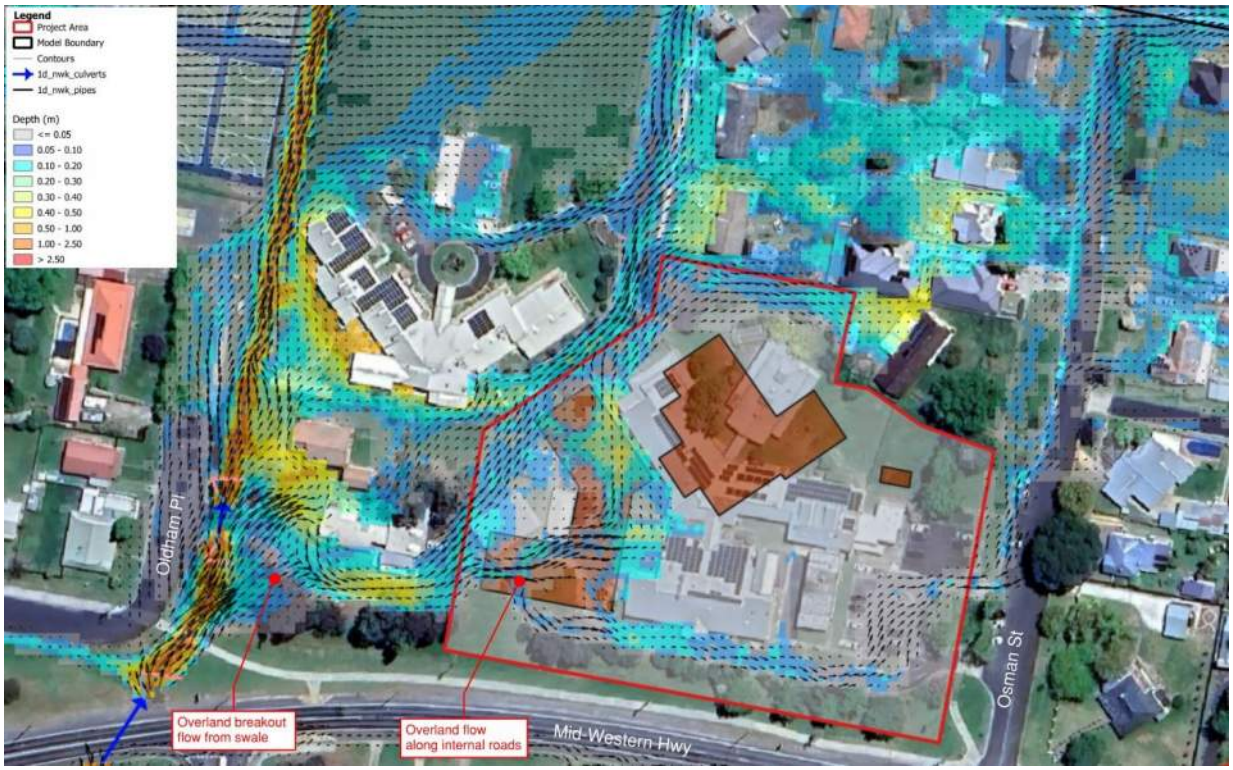

Figure 5-4: Existing conditions 1% AEP peak flood behaviour.

Flood hazard has been assessed in relation to flood depth and flood velocity. The generalised flood hazard curve outlined in ARR 2019 Book 5 Section 7.2.7 has been applied (ZAEM1). The output hazard values are 0 (zero) for no hazard and 1 to 6 for H1 to H6 respectively. Figure 5-5 outlines each of the Hazard Categories.

During the 1% AEP event the project site primarily shows a hazard category of up to H1 (generally safe for vehicles, people and buildings) with small patches of hazard category H3 (unsafe for vehicles, children and the elderly) observed at the Oldham Place entrance to the ambulance facility as shown in Figure 5-6.

During the PMF event the project site hazard categories of up to H5 (unsafe for vehicles and people. All building types vulnerable to structural damage) primarily contained within the internal roads of the site as shown in Figure 5-7.

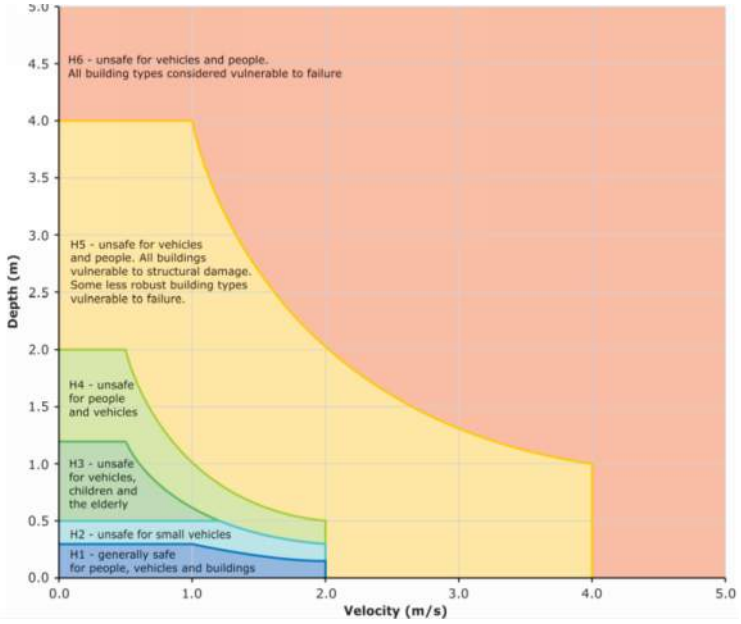

Figure 5-5: General flood hazard vulnerability curve.

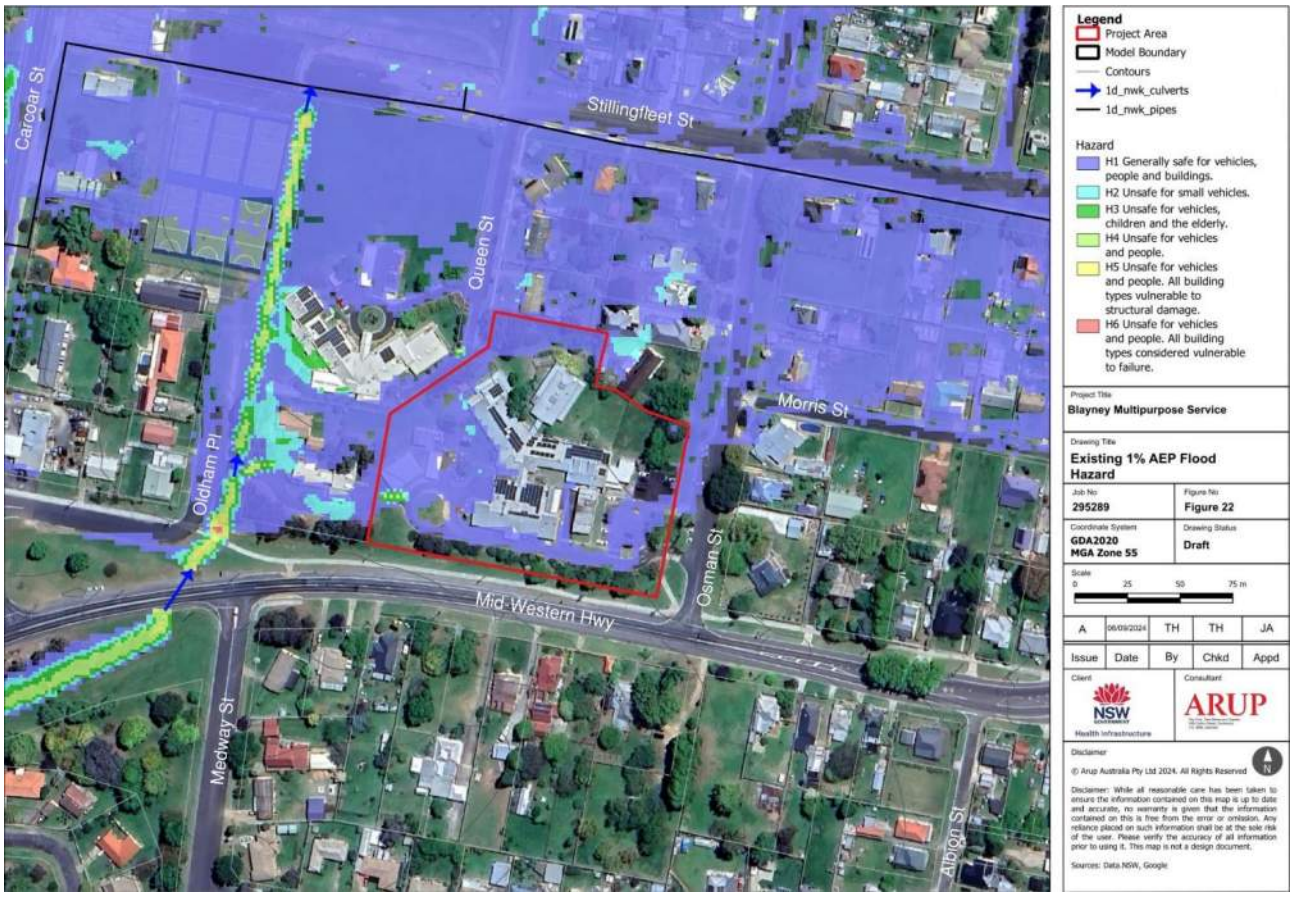

Figure 5-6: Existing conditions 1% AEP peak flood hazard.

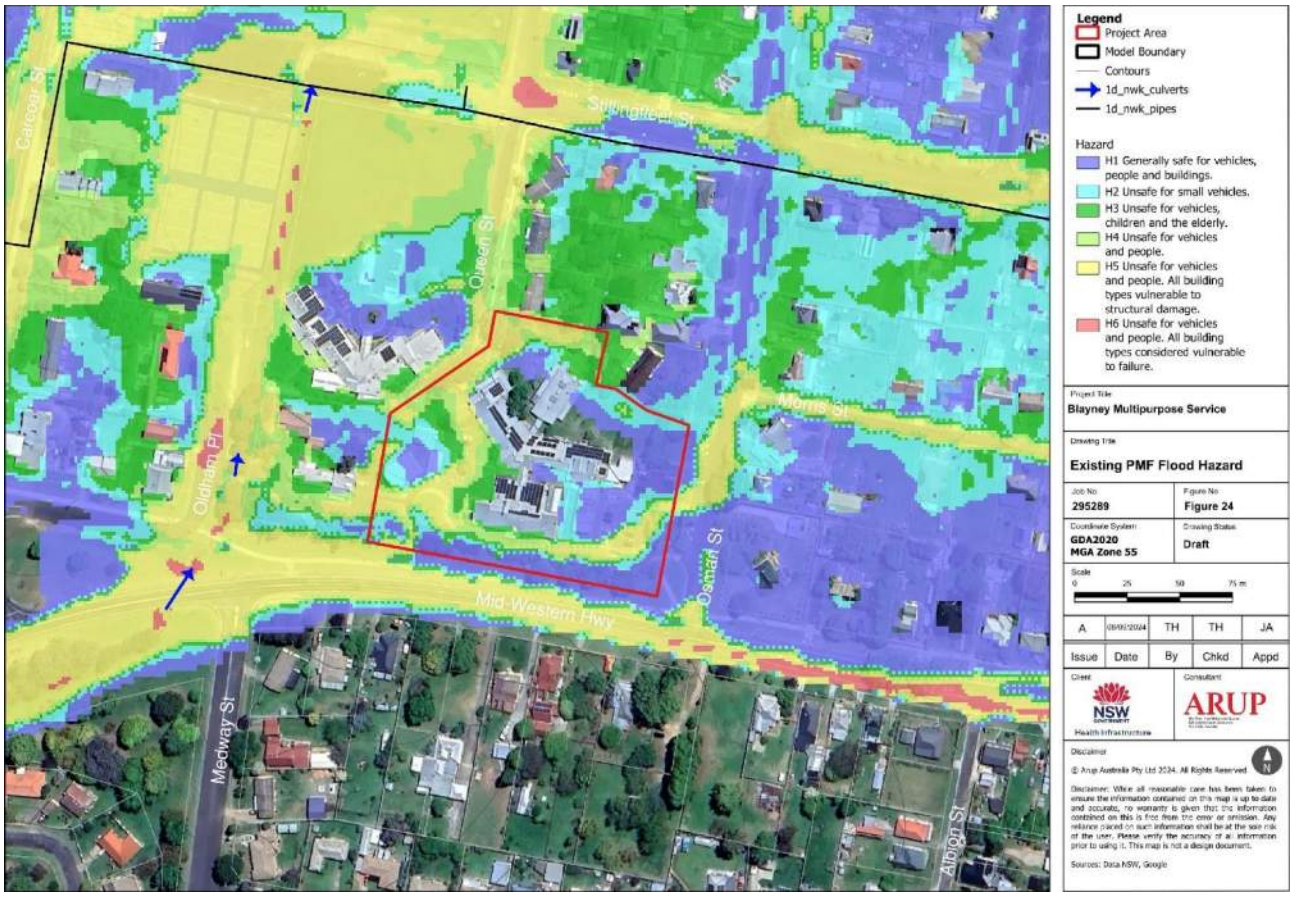

Figure 5-7: Existing conditions PMF peak flood hazard.

5.4.2 Validation against previous assessment

A validation against the previous assessment (Blayney Flood Study Addendum, Storm Consulting, 2022) was completed with results tabulated in Table 5-5 and shown in Figure 5-8 which demonstrates that the updates to the model produce comparable results to the previous assessment.

Table 5-5: Comparison in 1% AEP peak flood elevation to previous assessment

Location	1% AEP Peak Flood Level (m AHD)		Change in water level (m)
	Blayney Flood Study	Arup 2024	
A	879.52	879.53	0.01
B	877.20	877.28	0.09
C	874.60	874.66	0.06
D	876.15	876.21	0.06
E	874.74	874.71	-0.03

Figure 5-8: Comparison to previous assessment.

5.4.3 Post Development Conditions – Unmitigated

Testing was undertaken of the Blayney MPS facility with no flood mitigations, with the results outlined in Appendix C). These result indicate that:

- Impacts of up to 35mm are observed immediately north of the site.
- Hazard of up to H4 (unsafe for vehicles and people) is observed at the Oldham Place entrance to the ambulance facility in the 1% AEP event.
- During the PMF event the project site hazard categories of up to H5 (unsafe for vehicles and people. All building types vulnerable to structural damage) primarily contained within the internal roads of the site as shown in Figure 5-11.
- Hazard of up to H5 (unsafe for vehicles and people. All building types vulnerable to structural damage) is observed at the Oldham Place entrance to the ambulance facility and the Osman Street entry and exit to the MPS precinct.
- During the 1% AEP event, the MPS precinct maintains flood free access to the Mid-Western Highway via the Osman Street entry and exits.
- During the PMF event, the MPS facility is isolated with the Oldham Place entrance to the ambulance facility inundated by up to 350mm, whilst the Osmam Street entry and exit inundated by up to 130mm.
- The overland flows travelling from the Ambulance Station and along the western boundary of the site potentially result in flooding over flood or the Residential Aged Care wing of approximately 300 mm (1% AEP flood level of 875.15 m, AHD).

5.4.4 Post Development Conditions – Diversion Swale

To address the overflow flooding, a diversion swale is recommended to divert the overland flows travelling form the Ambulance station and to preserve flood immunity. Design conditions flood modelling results including this diversion swale (presented in Appendix D) shows:

- Overland flow originating from the Oldham Place swale to the west of the site and transversing through the ambulance facility, is effectively captured by the proposed swale and directed north as shown in Figure 5-9.
- The proposed MPS precinct buildings achieve flood immunity to the 1% AEP flood event through the use of a channel to divert overland flows around the building. This channel has a top width of 1.5 m, and a total depth of 0.5 m (refer Figure 5-2), however this may be optimised to fit the available space. The existing flowpath passing along the Mid-Western highway at southern boundary of the site is cut off by the proposed works, resulting in a reduction in surface water flooding within properties immediately to the north-east of the site as demonstrated in Figure 5-12.
- Impacts of up to 35mm are also observed immediately north of the site as shown in Figure 5-12.
- The following observations can be made about flood hazard:
    - Hazard is shown to largely remain as H1 (generally safe for vehicles, people and buildings) in the 1% AEP event with a small patch of hazard category H3 (unsafe for vehicles, children and the elderly) observed where flows enter the proposed swale.
    - Hazard of up to H4 (unsafe for vehicles and people) is observed at the Oldham Place entrance to the ambulance facility in the 1% AEP event.
    - During the PMF event the project site hazard categories of up to H5 (unsafe for vehicles and people. All building types vulnerable to structural damage) primarily contained within the internal roads of the site as shown in Figure 5-11.
    - Hazard of up to H5 (unsafe for vehicles and people. All building types vulnerable to structural damage) is observed at the Oldham Place entrance to the ambulance facility and the Osman Street entry and exit to the MPS precinct.
- The following observations can be made about access to the site:
    - During the 1% AEP event, the MPS precinct maintains flood free access to the Mid-Western Highway via the Osman Street entry and exits. The western entrance to the ambulance facility is cut where the driveway crosses the Oldham Place swale with depths of up to 100mm observed as shown in Figure 5-9.
    - During the PMF event, the MPS facility is isolated with the Oldham Place entrance to the ambulance facility inundated by up to 350mm, whilst the Osmam Street entry and exit inundated by up to 130mm.

These results indicate that there is no material change between the approved design and the mitigation measures proposed with respect to flood depth, level or hydraulic hazard. As such, the implementation of the diversion swale does not increase the impacts to the community or the Lee Roshana Aged Care Facility.

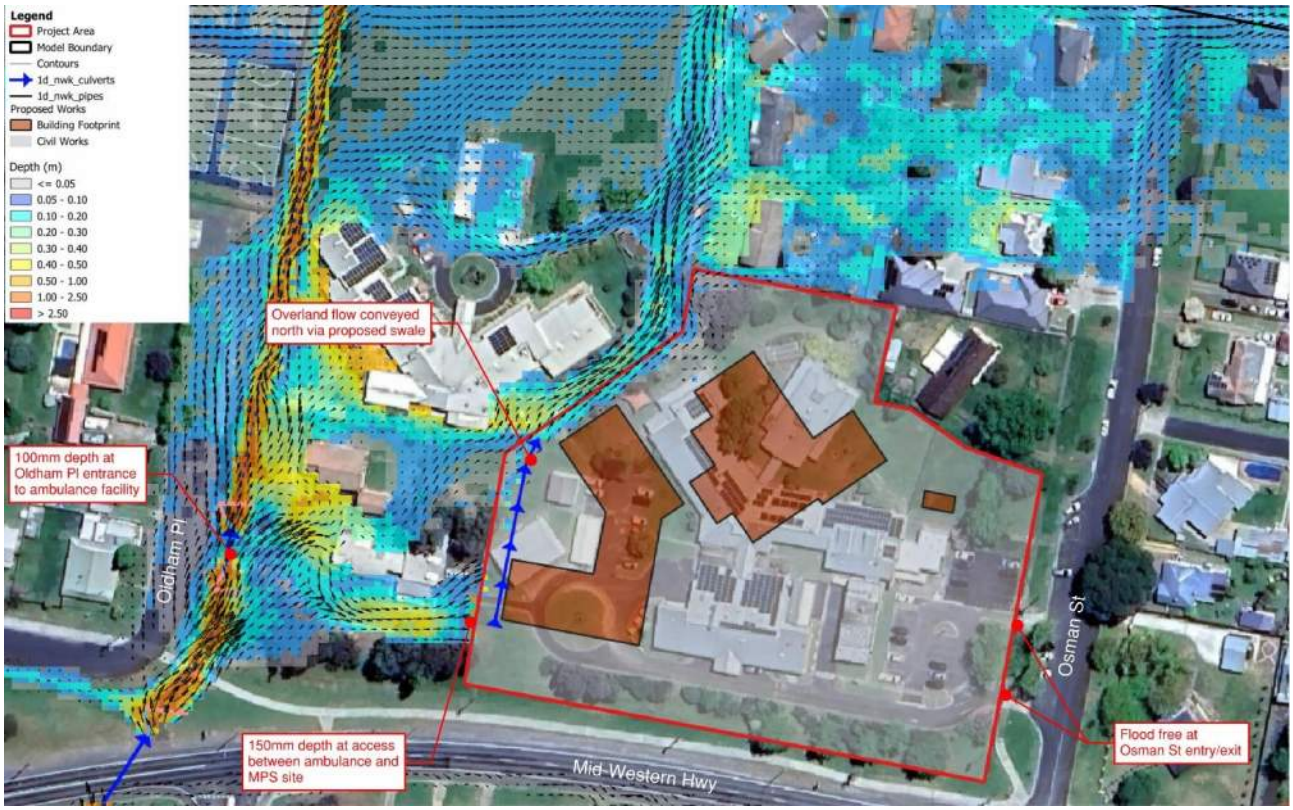

Figure 5-9: Design conditions 1% AEP peak flood depth.

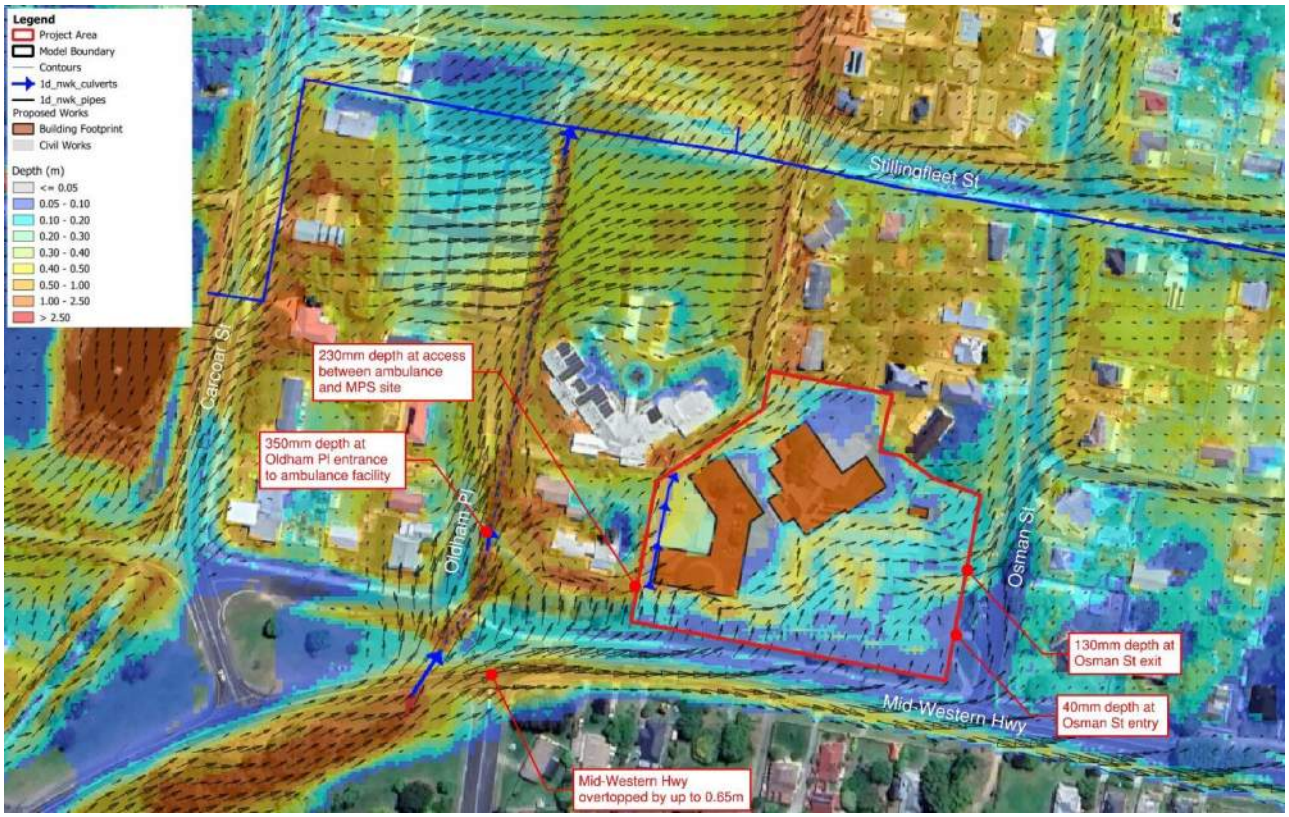

Figure 5-10: Design conditions PMF depth and velocity.

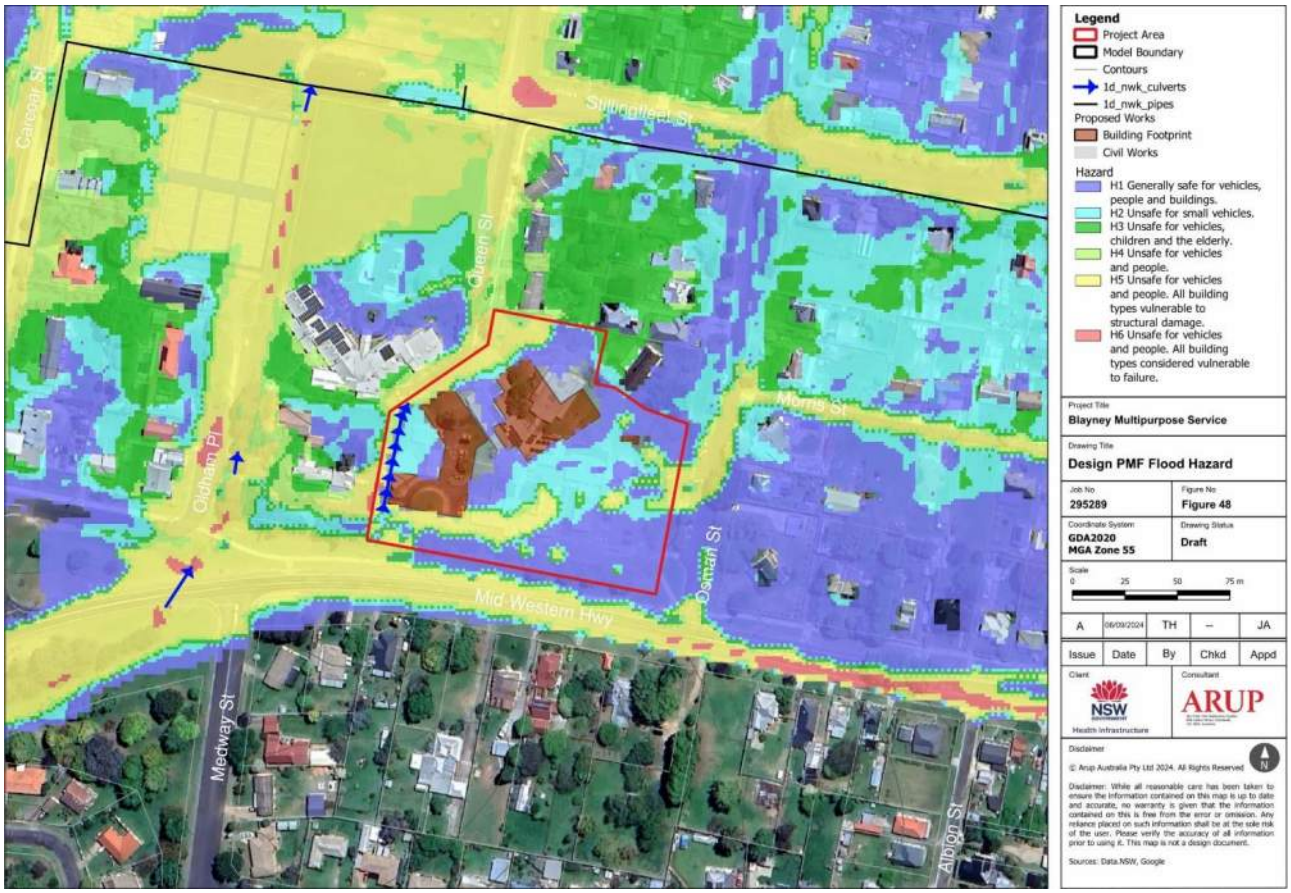

Figure 5-11: Design conditions PMF peak hydraulic hazard.

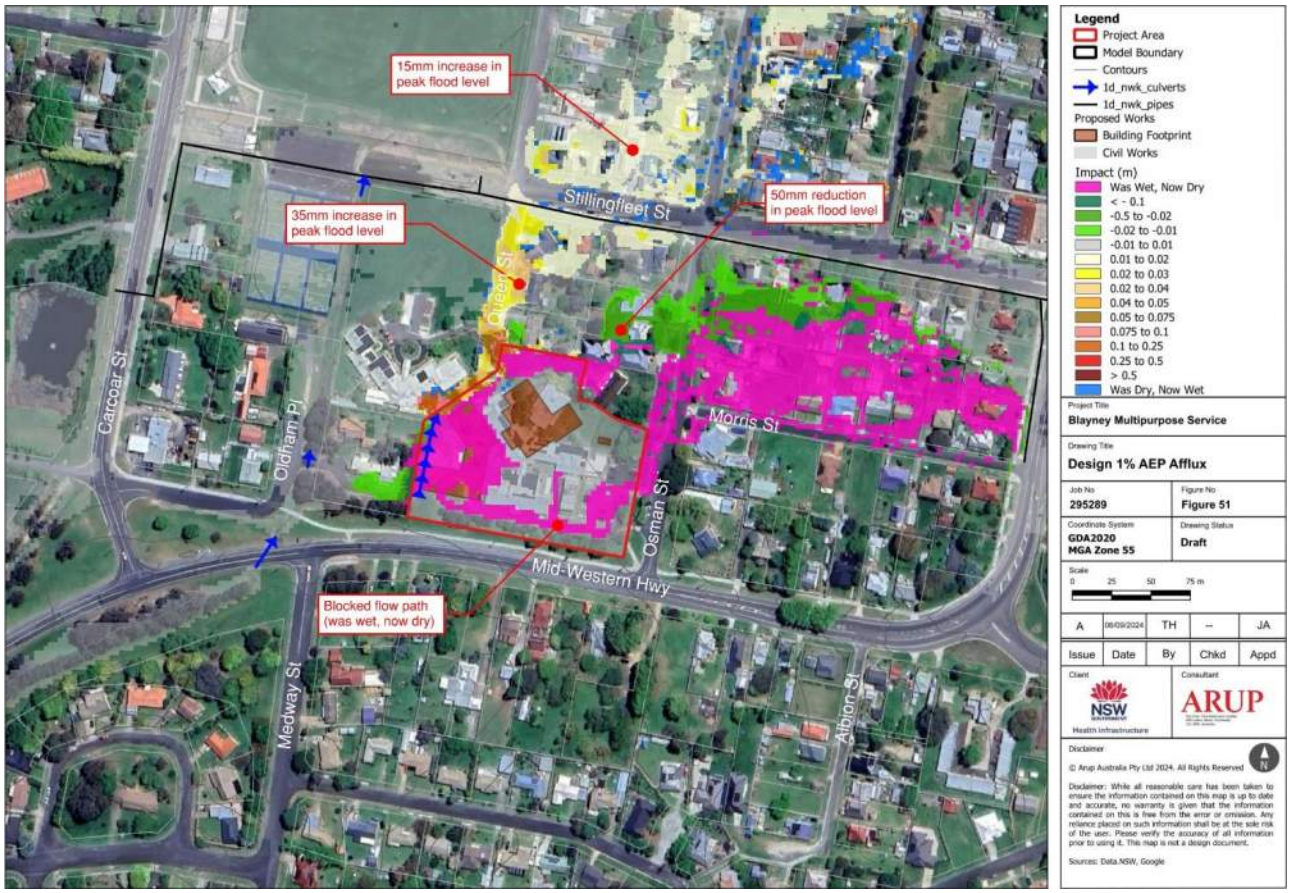

Figure 5-12: Design conditions 1% AEP peak flood impact.

5.5 Rate of Rise and Warning Times

The rate of rise of floodwaters at the key locations presented in Figure 5-13 are shown in Figure 5-14 to Figure 5-17 for the PMF event. It is noted that the key locations identified within the MPS Precinct (Locations 1 – 4) are only impacted in the PMF event.

The warning time for flows originating from upstream of the site is presented in Figure 5-18 and Figure 5-19. Notably, once overland flow levels have commenced rising, during an extreme event such as the PMF, the levels may rise rapidly and potentially exceed floor levels in affected areas within minutes.

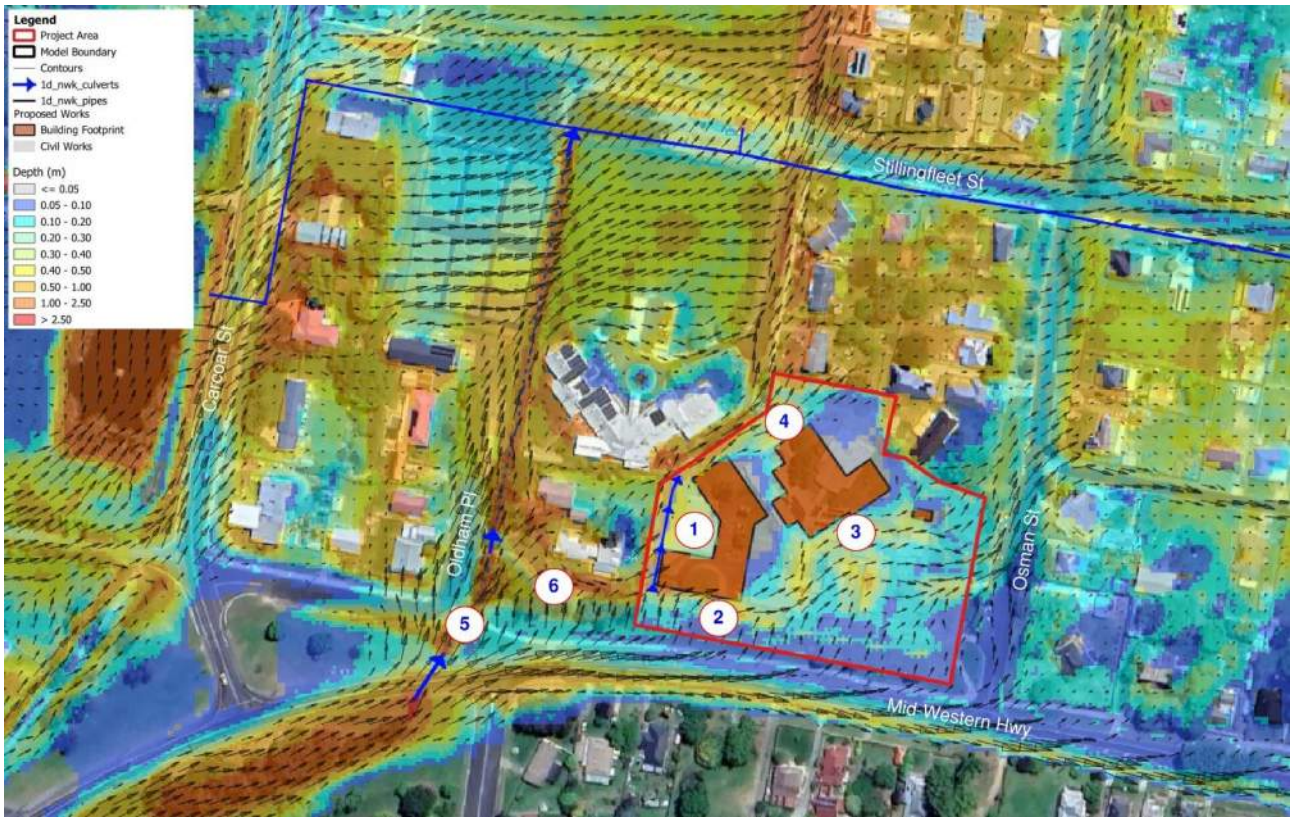

Figure 5-13: Reporting locations – Design conditions PMF peak flood depth.

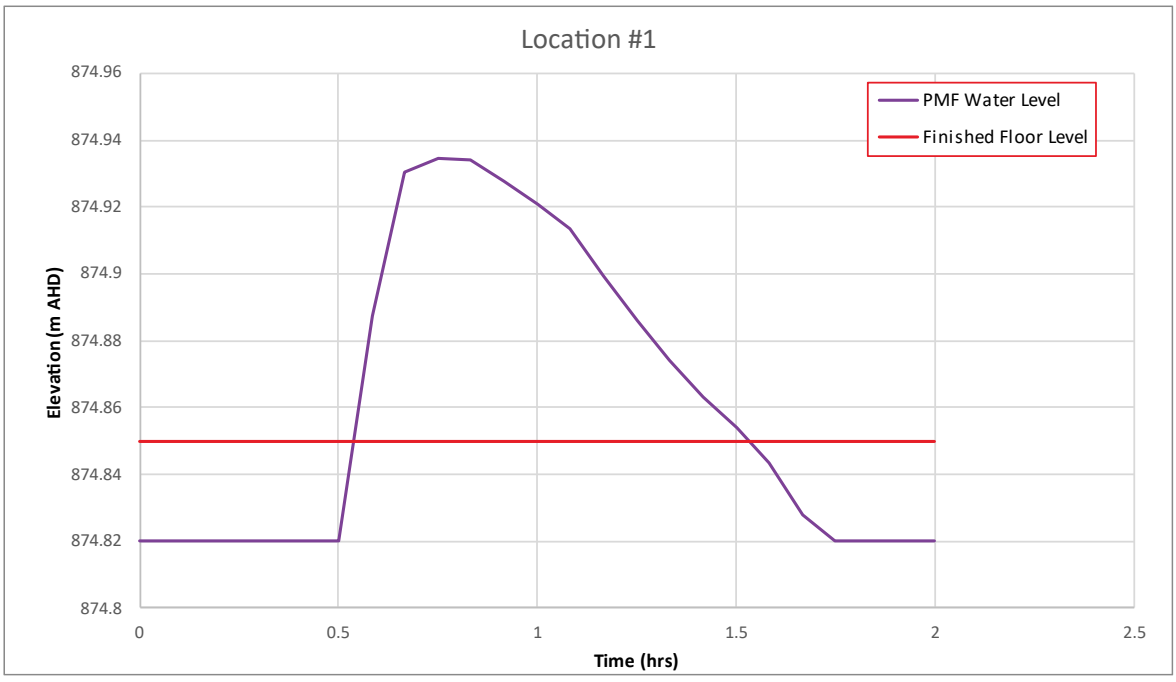

Figure 5-14: Rate of rise of PMF event within western courtyard.

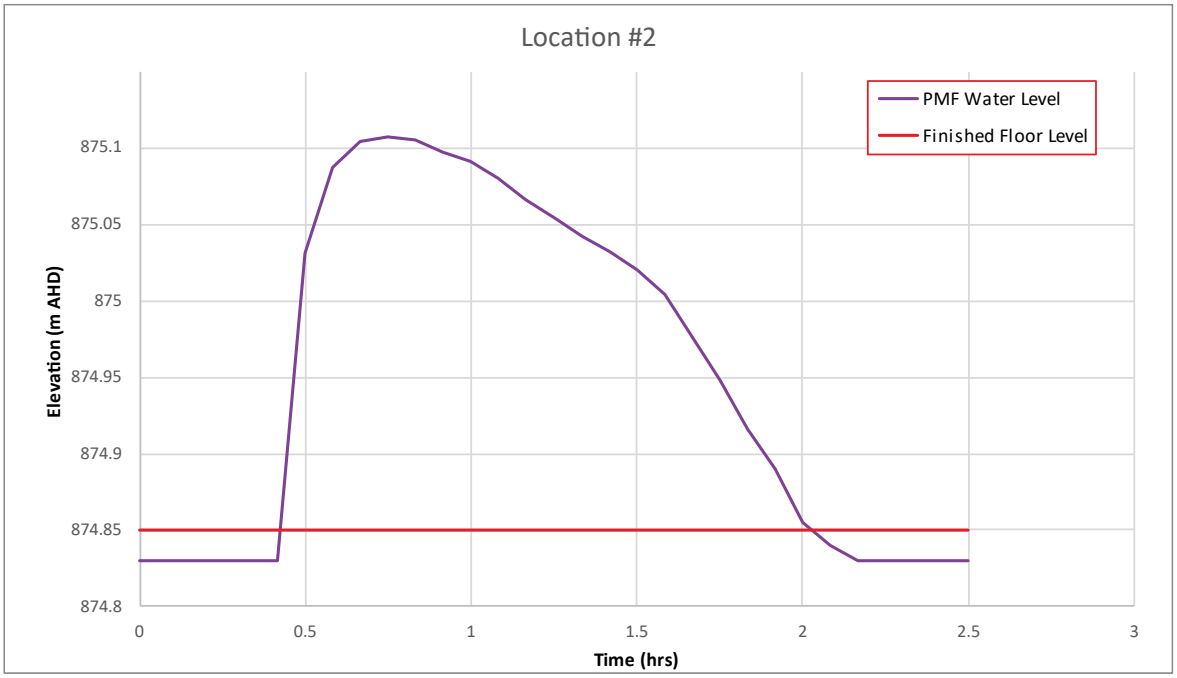

Figure 5-15: Rate of rise of PMF event at southern boundary of Residential Aged Care facility.

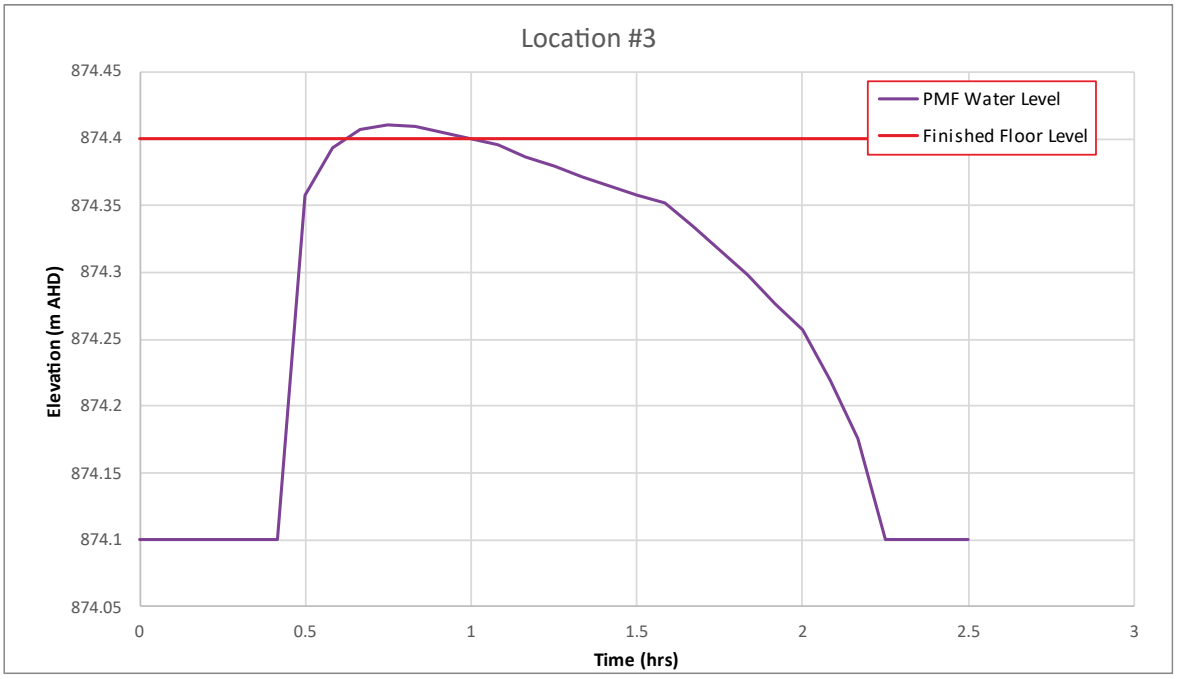

Figure 5-16: Rate of rise of PMF event at emergency drop-off zone.

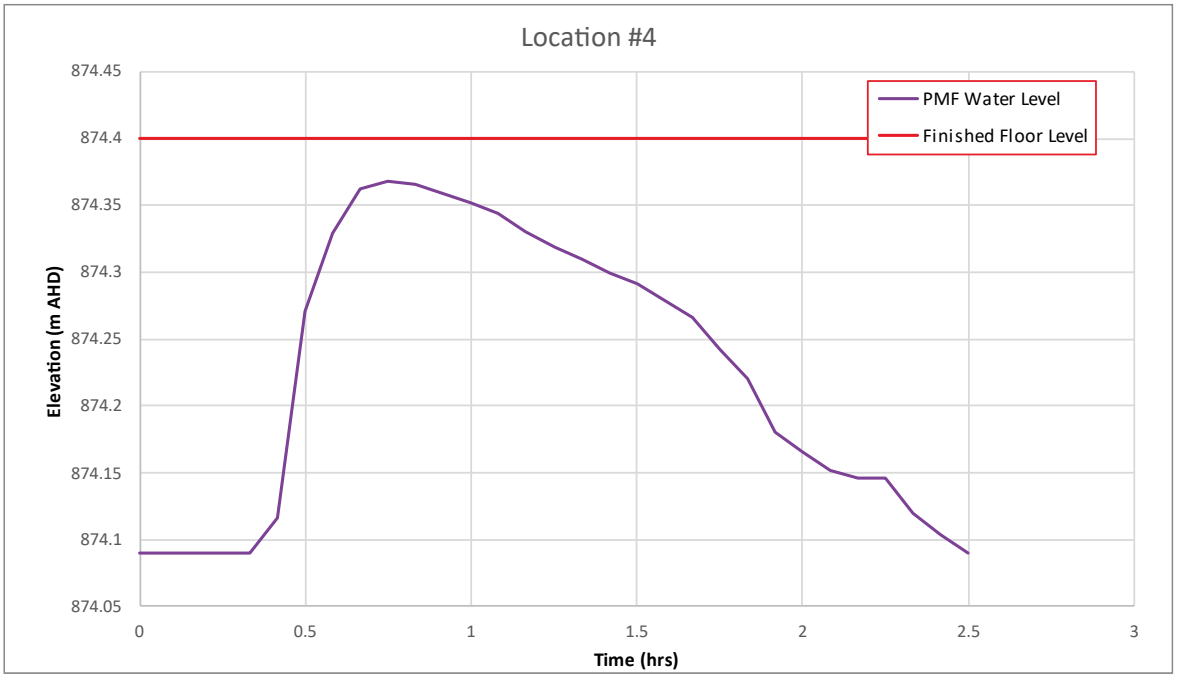

Figure 5-17: Rate of rise of PMF event at north-western boundary of Support and Mortuary unit.

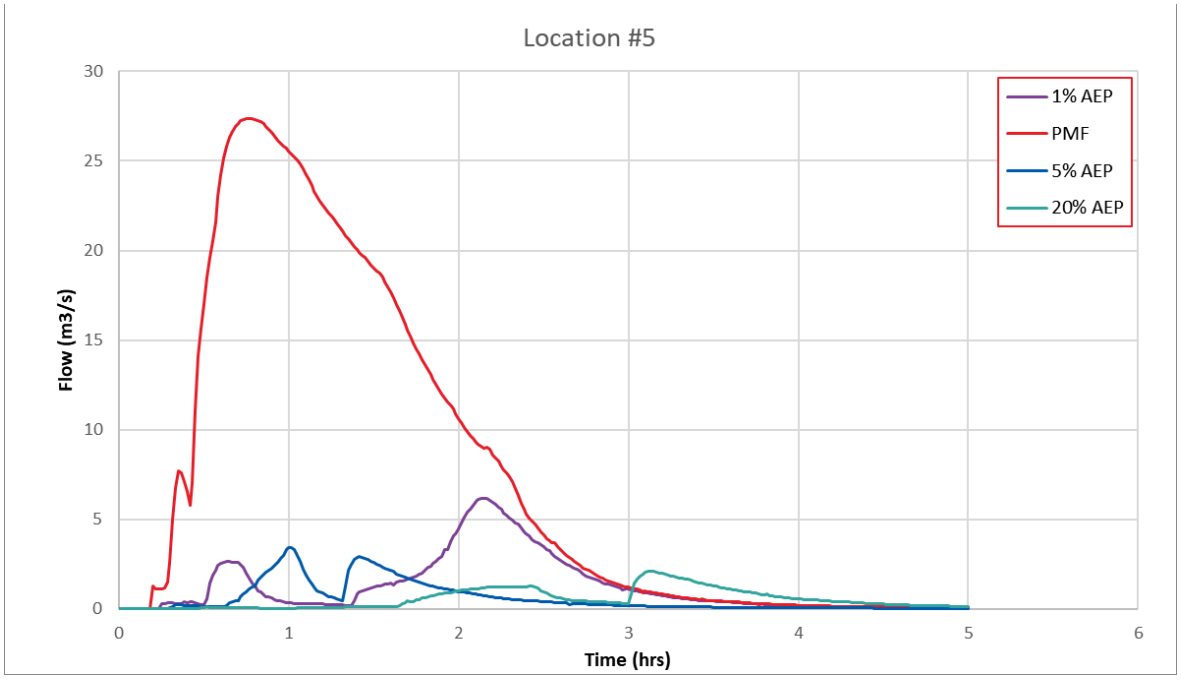

Figure 5-18 Flow hydrograph at Oldham Place

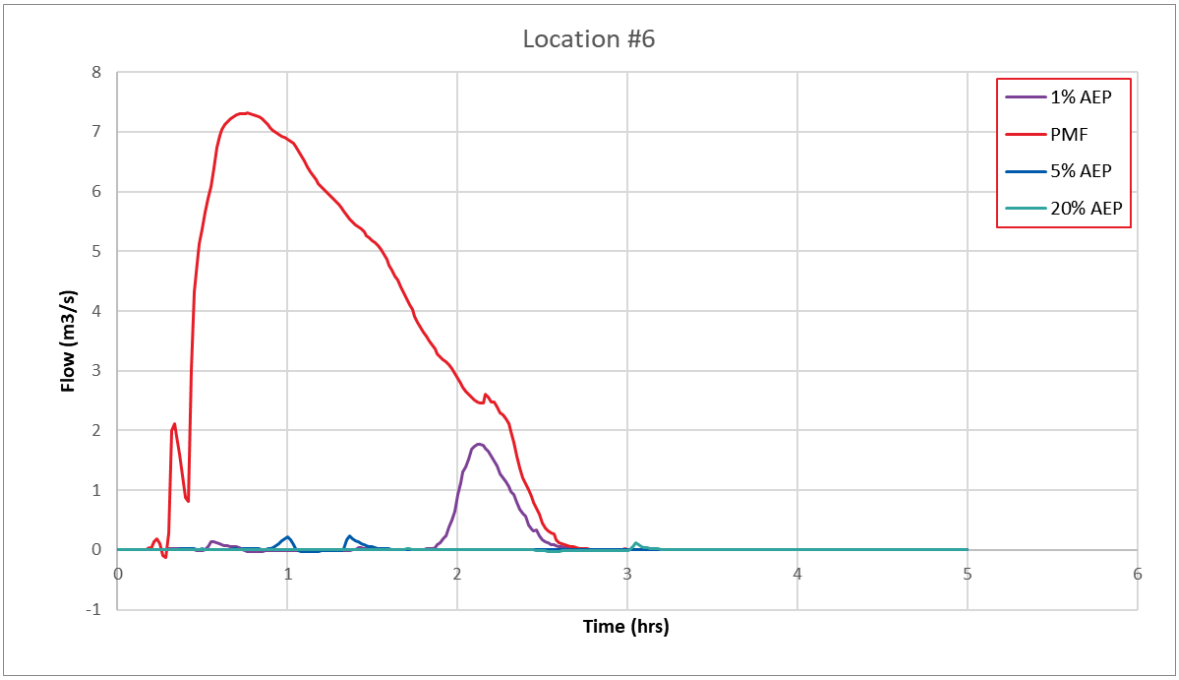

Figure 5-19 Flow hydrograph at the Ambulance Station

5.6 Blockage

This assessment has considered the blockage factors as applied in the exiting Council Flood study provided to undertake this study. This retained a zero blockage on the inlet to many of the major culverts. Hower, as this site is located downstream of many of the major culverts, this has the effect of maximising the flow rate through the town and across the site. As such, this represents a conservative envelope of blockage for this particular site.

A sensitivity assessment on the potential blockage has been completed for the major culvert transversing the Mid-Western Highway directly upstream of the site. A blockage factor of 50% has been tested as a sensitivity for the 1% AEP existing conditions scenario. Results from the blockage sensitivity scenario are presented in Figure 5-20. This demonstrates that in the case that the major transverse culvert immediately upstream of the site is blocked by debris, a large portion of flow is diverted to the east along the southern side of the Mid-Western Highway. At the site, surface water levels are reduced by up to 50mm.

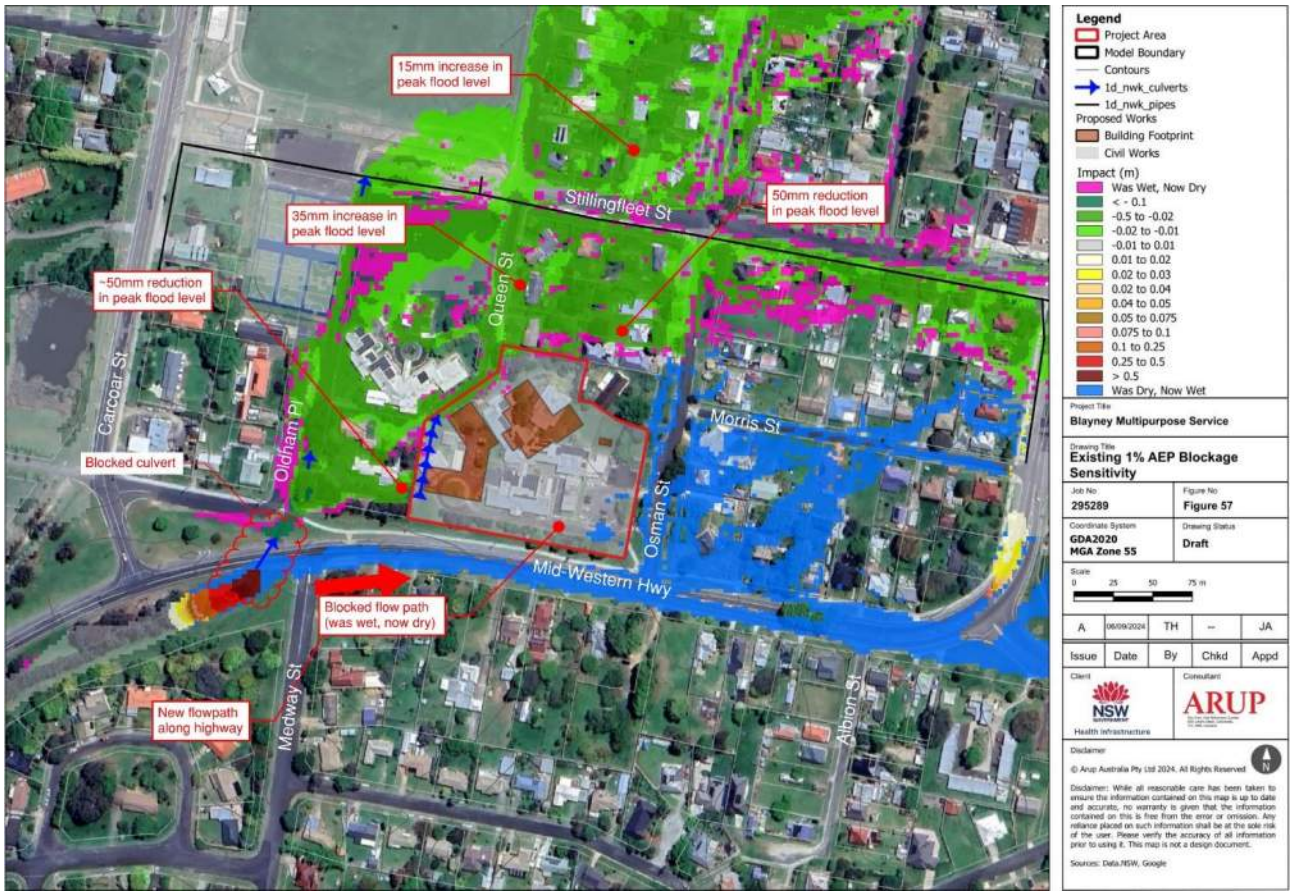

Figure 5-20: Blockage sensitivity 1% AEP peak flood impact.

5.7 Flooding Summary

The flooding results are consistent with the types of overland flow typical of urban areas such as the Blayney township. The flooding results indicate that the site is not affected by the Mainstream flooding associated with the Belubula River for all events up to and including the PMF.

Minor overland flows (up to the 20% AEP) event also do not affect the site, with mapping of the 20% AEP indicating that overland flow s in this event bypass the site along the existing drainage system. As such, aside from managing the direct rainfall that falls on the site, additional drainage network is not expected to be required.

The site is however affected by rarer overland flow events, such as the 1% AEP flood. To protect the building, the design includes a swale that is cut into the terrain along the southwestern side. This intercepts overland flows that may traverse the site. With the inclusion of an appropriate diversion swale, the immunity of the southwestern building can be maintained.

However, as the development intercepts the overland flows that would otherwise cross the site from west to east, flowing downhill towards the Belubula River, the level of the overland flows is increased in the southern portion of Queen Street. This may increase the inundation level at some of the dwellings by up to 35 mm. In this area, overland flow depths are shallow (less than 0.2 m) and the affected dwellings are elevated by approximately 300 mm (notwithstanding garage spaces and other typically non-habitable areas). As such the changes will not increase over floor flooding in the 1% AEP event. That is, areas that may already be subject to inundation in events up to and in including the 1% AEP will still be subject to inundation, while areas that are not subject to inundation are not expected to receive additional over. Note that this inundation is as a result of the MPS building and earthworks, and is not related to the proposed swale.

Flooding currently results in potentially hazardous in Queen Street, with a hydraulic hazard of H5 (Unsafe for vehicles and people. All building types vulnerable to structural damage). This maximum hazard is not affected by the proposal, with the hydraulic hazard category remaining unchanged for the PMF. However,

there is a minor escalation in the flood hazard for the 1% AEP event, with some localised areas escalating from H1 (Generally safe for vehicles, people and buildings) to H2 (Unsafe for small vehicles). This escalation doesn't exceed the hydraulic hazard threshold for the elderly or children.

Hydraulic hazard mapping is an indication of the potential flood risk only, and is based on hydraulic factors only. The actual flood hazard during an event may vary for a range of factors beyond those identified here. As such, the SES recommends avoiding evacuating through flood water. As such, the potential for evacuation risk is substantially unchanged as a result of the Blayney MPS.

5.7.1 Minimum Floor Levels

In order to meet the NSW Health Infrastructure requirements the finished floors to be above the 1% AEP flood. Due to the resolution of the model, the flood levels reported in the swale must be calculated using a backwater calculation based on the flow and connecting hydraulic conditions. These minimum are outlined in Table 6.

Table 6 Minimum floor levels

Location	Proposed floor Level	1% AEP flood level
Residential aged care (RAC) wing	874.85 m AHD	874.78 m AHD
Health One wing	874.40 m AHD	874.38 m AHD
Generator Room	874.10 m AHD	Not Affected

5.7.2 Pollution Risk

The current proposal reduces the potential for overflow flooding in all events up to the 1% AEP. This is an improvement as compared to the current health facilities. As such, the potential for pollution associated with inundation of the facilities is reduced.

5.7.3 Impact to structures

The detailed design of the building structures will need to consider the resilience to flooding and inundation. Guidance is provided regarding flood resilient infrastructure including:

- Information Handbook: Construction of Buildings in Flood Hazard Area (ACBC, 2012)
- ABCB Standard: Construction of buildings in flood hazard areas (ACBC, 2012)
- Flood Damage-Resistant Materials Requirements for Buildings Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program (FEMA 2008)
- Flood Resilient Building Guidance for Queensland Homes (Queensland Reconstruction Authority, 2019)

These guidelines require the use of flood resilient material and construction techniques below the 1% AEP flood level, and provide some specific guidance regarding suitable materials. They also provide guidance on ensuring that the construction is flood resilient.

6. Flood Emergency Response

The Blayney MPS has an existing emergency response plan: Blayney Health Service Emergency Management Plan & Standing Operating Procedures (Western NSW Local Health District, 2021). This plan outlines the response to a range of emergency management scenarios. A flood emergency would be managed under the plan for a *Code Orange*.

The hydraulic hazard mapping for the site indicates that in an extreme event such as the PMF, there may be high hazards (H3, H4 and H5) associated with the overland flows surrounding portions of the building (Figure 6-1). However, these only affect the southwestern wing (Residential Aged Care). Other facilities, including the inpatient unit, clinical support, shared services, emergency and reception are not directly impacted by significant hydraulic hazard, and the depth of any over floor inundation is shallow.

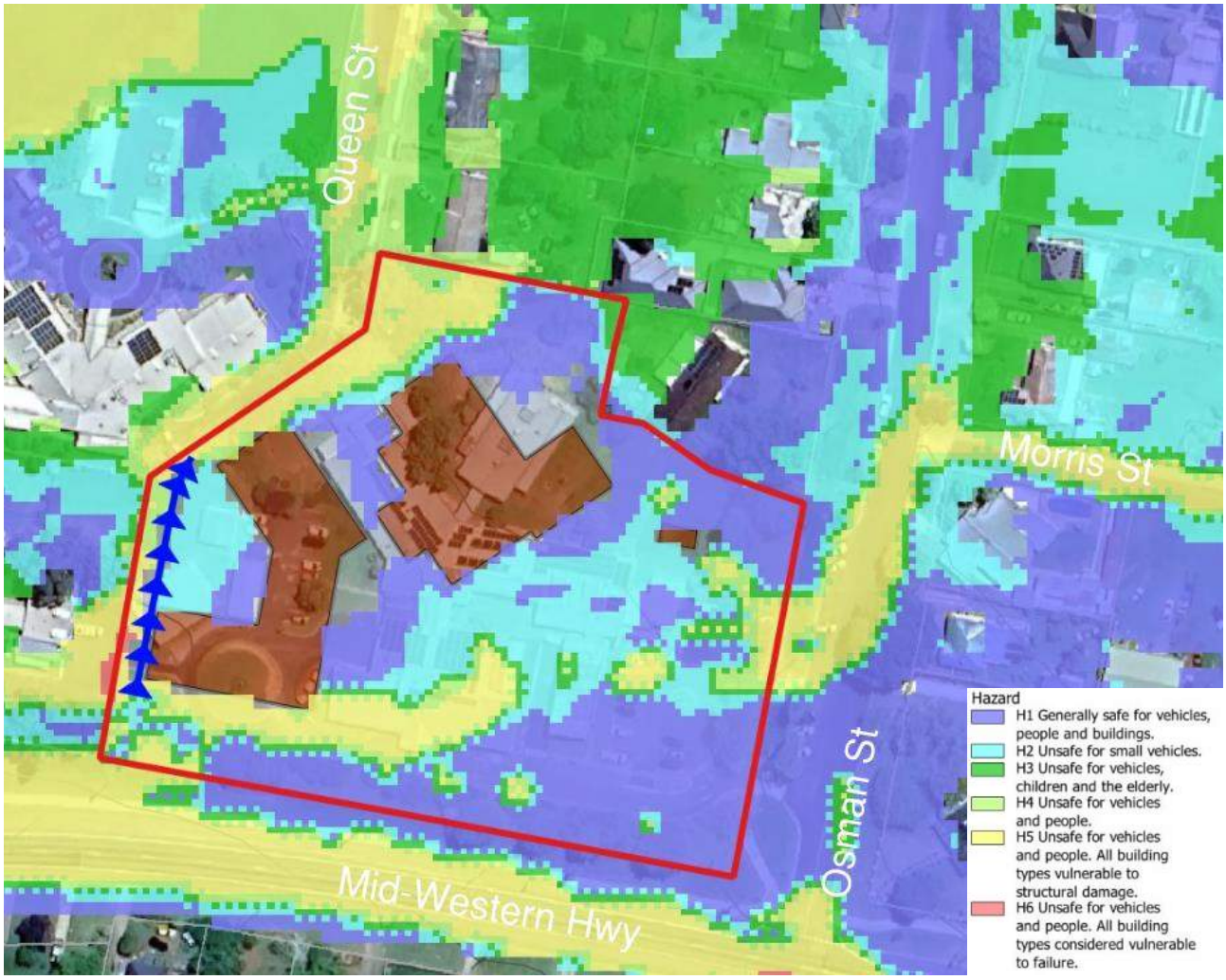

Figure 6-1 Provisional hydraulic hazard at the site.

6.1 Emergency response plan modifications

Noting that rapid rise in overland flow levels during an extreme event, as well as the high hazard in specific areas, it is adviasable that any evacuation be onsite, moving from flood affected areas to non-flood affected areas within the facility. If further evacuation (Stage 3) is required, it is advisable that this is done via Osman Street and only following an storm or flood event. Evacuation along Queen Street may be inadviasable due to the hydraulic hazard that may be associated with overland flows.

Modification of the Blayney Health Service Emergency Management Plan & Standing Operating Procedures to advise of separate procedures during a flood event is recommended.

6.2 Flood Monitoring

Resources are currently available to assist in monitoring flood risks and to ensure that any flood warnings are responded to promptly. Resources form the BoM and SES will provide advance notice of potentially hazardous conditions. However, reliance should not be placed on any single data source.

6.2.1 Bureau of Meteorology (BoM)

BoM have several services available to warn of flooding or hazardous storm conditions. These include:

- Severe Thunderstorm Warning Services to alert communities of more dangerous thunderstorms
- Severe Weather Warning Services provide notification when severe weather is occurring in an area or expected to move into an area. Severe Weather Warnings include notification of very heavy rain that may lead to flash flooding.
- Flood Watch – BoM issues a Flood Watch to provide early advice of a developing situation that may lead to flooding.
- Flood Warnings are provided by BoM to advice that flooding is occurring or expected to occur in an area based on defined criteria.

6.2.2 State Emergency Services (SES)

The SES operates several tools for monitoring and notifying flood risks. These include:

- SES website – Warnings available through the SES website
- NSW SES social media channels
- Hazard Watch – an online platform for accessing weather warnings.
- ABC radio reporting of weather warnings.

6.2.3 On-site monitoring

Flood conditions can vary dynamically, and it is expected that once hospital management have been alerted to potential conditions, some monitoring of the outside conditions will be required. It is advisable to monitor the carpark and surround areas for signs of inundation, for example, notable overland flows.

6.3 Flood Response

The appropriate flood response should be reflective of the flood risk. Most storm events, including incidents of riverine flooding, will represent an abnormal operating condition for the facility, however, are unlikely to significantly affect the facility in a way that presents a risk to those inside the facility:

6.3.1 Before a storm

During routine operation of the facility, some monitoring of the weather and potential for flood is required by facility managers. If storm or flood warning are received, this will require an adjustment to the operating procedure to reflect the potential for inundation and flood hazard in the surrounding area.

- Monitor the BoM, SES and Council for forecasts of potentially hazardous storm events.
- If notification is received, review admissions, staffing and inventory to reflect the potential hazard.
- Review emergency response systems to ensure that they are functional.
- Remind key staff of their roles and responsibilities.
- Provide a briefing to all staff making them aware of the potential hazard.

6.3.2 During a storm

During a storm event, a more active posture will be required to respond to changes in the situation. Actions include:

- Visually monitor condition surrounding the site (for example, in Queens Street, Osman Street and in the carpark).
- Monitor internal systems such as power, water, IT and medical gas.
- Provide appropriate information and assurance to staff and patients.
- If necessary, escalate the incident condition.
- Relocate within the facility if inundation is noted.

6.3.3 After a storm

Following a storm event, a number of actions will be required to ensure that the facility (in its entirety) is safe, and to restore functionality.

- Check power is safe.
- Check all levels and spaces for damage and report to management.
- Commence cleaning and recovery if necessary.

6.3.4 Recovery actions

If the facility has sustained damage during a storm or flood, the operations will need to be reviewed to ensure the on-going safety of all staff and patients. Once the order to stand down has been issued, this may include:

- Review patient load, and transfer patients to other facilities, discharge them or resume the functions at other sites within the precinct as appropriate.
- Transition functions to other facilities (e.g. Canowindra or Cowra).
- Undertake electrical inspections.
- Damage review (check all rooms and spaces).
- Cleaning.
- Repair or replacement of damaged equipment.

6.4 Communications

During an incident, communications are to be managed by the hospital management, or other delegates in accordance with the disaster response plan. This plan will also include documentation on the distribution of information to other key staff, nurses and doctors, and to patients. Where applicable and feasible, administration staff may be required to control admissions and discharges around the hazard conditions.

During all flooding and storm events, staff and patients are to be reminded about the SES advice to not drive through floodwater.

6.4.1 Communications equipment

To co-ordinate with other agencies, communications equipment compatible with the SES and other response agencies will be required. Consultation with the local SES unit to confirm the communications requirements is advised.

6.5 Flood Plan Documentation

It will be necessary to develop, document and train the appropriate personnel in the appropriate flood response actions, including:

- How flood warnings are monitored/received.
- How flood warnings are to be communicated to the occupiers of the building/site.
- Who is responsible for activating the flood response. Ensuring that contact numbers are available for individual(s) responsible for the managing the flood response.
- Headcount for occupiers/evacuees.
- Identifying post-flood responses including assisting individuals in their exit from site is a safe manner with consideration of potential new hazards arising from flooding.

These actions are to be undertaken as part of the next Emergency plan update.

7. Conclusions and Recommendations

The town of Blayney is affected by both riverine flooding (associated with the Belubula River), local catchment flooding (associated with the gulleys and stormwater channels though the town), and overland flows that traverse the urban area. These event may produce some significant hydraulic hazards within the urban areas. However, these hydraulic hazards are consistent with the extreme rainfall events associated with the PMF, and similar hazards in these events are common throughout NSW. As such, flooding and extreme rainfall, as well as associated hazards such and high winds and storms, represent a significant flood hazard that should be considered in the planning of any development.

However, the exiting Council mapping indicates that this site is not affected by mainstream flooding associated with the Belubula River, nor is it affected directly by local catchment flooding (Section 2.2). As such, the flooding issues that do affect the site are overland flows, including overland flows that have escaped the drainage system at Oldham Place and passes through the Ambulance station west of the Blayney MPS site.

Modelling undertaken for this project has indicated that minor and nuisance overland flows (20% AEP do not affect the site. These overland flows only affect the site in rare events such as the 1% AEP event. With an appropriate drainage swale along the batter slow on the western boundary, the required immunity from overland flows can be maintained for the Residential Aged Care building (Finished floor level of 874.85m AHD) and the Emergency Department building (finished floor level of 874.40 m AHD). As such, the flood immunity requirements of NSW Health are achieved. This swale would connect with the flow in Queen Street, in keeping with the major / minor principle outlined in the Guidelines for Engineering Works (WBC Strategic Alliance, 2009).

Due to the shallow flows some high flood hazard (categories H3, H4 and H5) is noted in areas around the hospital. However, this will only affect the southwestern corner of the facility. The residual flooding risk can be managed with on-site relocation inside the facility if required.

It is noted that as the development does intercept existing overland flows and direct them towards Queen Street. This may result in some afflux may be noted at properties in this area. However, the depths of flooding are shallow, even in rare events such as the 1% AEP storm. Many properties already affected in this event to some degree. Due to the shallow overland flows, it is unlikely that this results in additional over floor flooding to neighbouring properties. This change is also not materially different to the current approved design. Opportunities to minimise this would require significant drainage work through the Blayney township.

With the above measures, the flood risk to those inside the facility, and the surrounding community, can be minimised. However, many of the risks are associated with shallow overland flows, and affect the town more broadly, and so are not specific to the site.

7.1 Recommendations

To enable the flood risk to both the community, staff and patients of the Blayney MPS, the following flood management measures are recommended:

- An appropriately sized drainage swale be installed along the western boundary (at the base of the batter slope) to carry intercepted overland flows an maintain the required flood immunity for the facility.
- The *Blayney Health Service Emergency Management Plan & Standing Operating Procedures* be updated to address flooding directly. In the event that the facility becomes inundated, those in the affected sections of the hospital are to be directed to other parts of the facility as a safer place.
    - The plan should indicate that in the event of a flood, evacuation via Queen Street is not advised.
    - If further evacuation off site (Stage 3 Evacuation) is required, this should be organised via the Osman Street access, and only when safe to do so.

- Off-site evacuation should consider both local conditions (in the streets surrounding the MPS and directly observable from the facility), as well as the regional flood conditions. The plan should direct that this may require co-ordination with the local SES commander to understand regional flood conditions.
- A stockpile of flood management materials should be maintained on site. This includes sandbags, mops, communications devices for communicating with the SES and other agencies and other cleaning equipment to control local inundation on site.
- SES material regarding flood safety, including advisories to not drive through floodwater should be obtained, and displayed within the facility when commissioned (for example, on an appropriate notice board).
- Maintain facilities to transfer patents to other facilities following a flood or storm event.
    - Any changes to the vehicles maintained on-site should be in response to an operational risk review and update of the *Blayney Health Service Emergency Management Plan & Standing Operating Procedures.*
- The building should consider management of overland flows and drainage along all building perimeters where there is catchment area that could runoff towards the building, even if this is not identified as flooding.

References

Bureau of Meteorology, 2003, The Estimation of Probable Maximum Precipitation in Australia: Generalised Short-Duration Method.

Jacobs, 2015, Blayney Flood Study, Blayney Shire Council. Prepared for Blayney Shire Council

Storm Consulting, 2022, Addendum-to-Blayney-flood-study Prepared for Blayney Shire Council

Western NSW Local Health District, 2021, Blayney Health Service Emergency Management Plan & Standing Operating Procedures

Appendix A

Flood Model Configuration

Legend

- Project Area
- Model Boundary
- Contours
- 2d_code_bldgs
- 2d_zsh_gully
- 2d_zsh_ridge
- 1d_nwk_culverts
- 1d_nwk_pipes

2d_bc_culverts

- CN
- SX

Project Title

Blayney Multipurpose Service

Drawing Title

TUFLOW Model Setup - Existing

Job No	Figure No
295289	**Figure 1**
Coordinate System **GDA2020 MGA Zone 55**	Drawing Status **Draft**

Scale

0 50 100 150 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client

NSW GOVERNMENT
Health Infrastructure

Consultant

ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

Disclaimer

N

Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 2d_sa_pits
- 2d_code_bldgs
- 2d_sa
- 1d_bc
- 2d_bc_B_HX_R

2d_bc_culverts
- CN
- SX

2d_bc_B_HX_L
- CN
- HX

1d_nwk_channels
- W
- S
- B

Project Title
Blayney Multipurpose Service

Drawing Title
TUFLOW Model Boundary Conditions - Existing

Job No	Figure No
295289	**Figure 2**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 50 100 150 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client
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Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

Disclaimer

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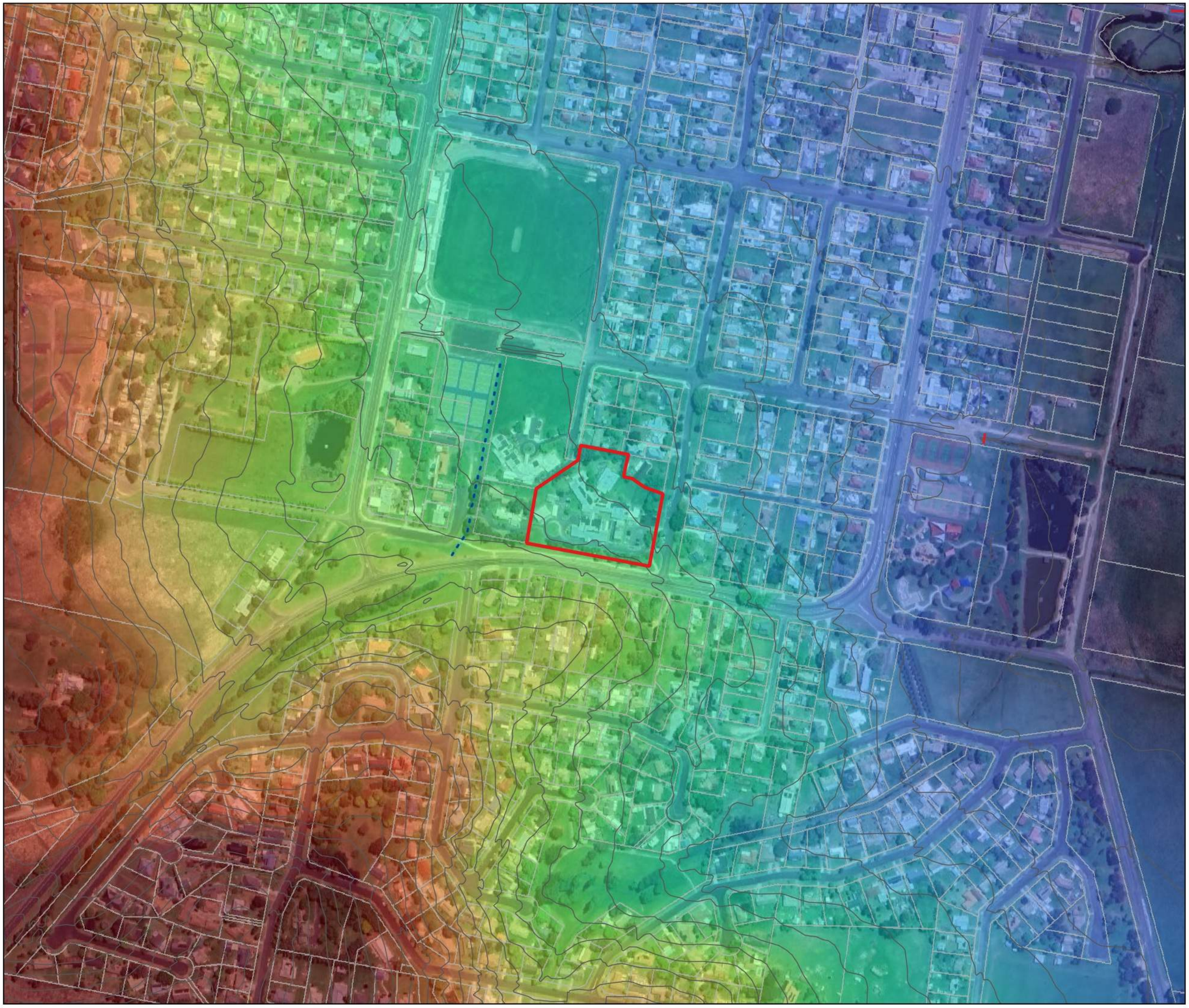
Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 2d_zsh_gully
- 2d_zsh_ridge

LiDAR (m AHD)

900

860

Project Title

Blayney Multipurpose Service

Drawing Title

TUFLOW Model Topography - Existing

Job No	Figure No
295289	**Figure 3**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 50 100 150 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client

NSW GOVERNMENT Health Infrastructure

Consultant

ARUP

Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 2d_code_bldgs

2d_Materials

- Roads (n = 0.015)
- Urban Area (n = 0.200)
- Waterways (n = 0.05)
- Wetlands (n = 0.120)
- Dense Vegetation (n = 0.120)

Project Title
Blayney Multipurpose Service

Drawing Title
TUFLOW Model Roughness - Existing

Job No	Figure No
295289	**Figure 4**
Coordinate System **GDA2020 MGA Zone 55**	Drawing Status **Draft**

Scale
0 50 100 150 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
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699 Collins Street, Docklands,
VIC 3008, Australia

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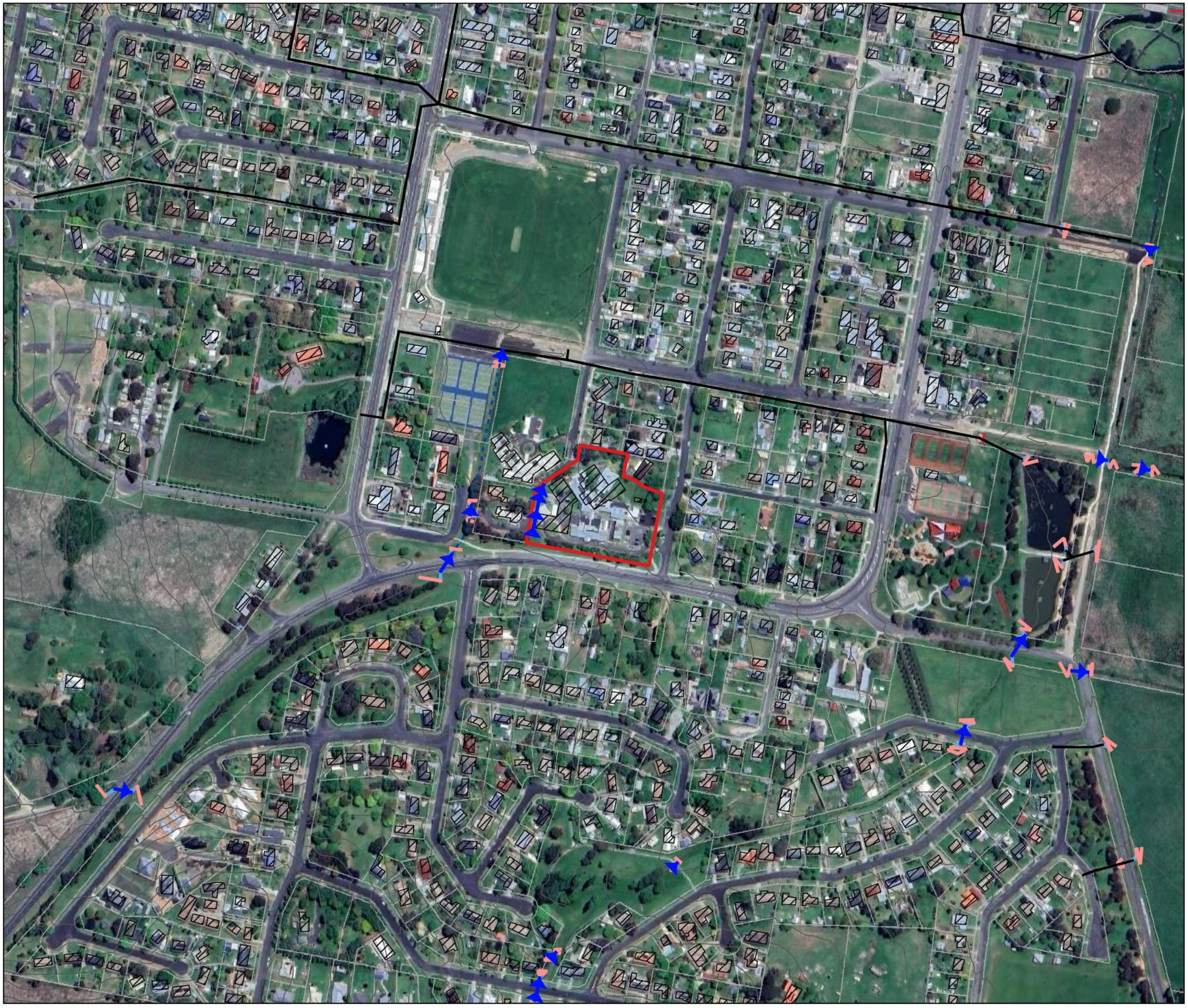
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 2d_zsh_gully
- 2d_zsh_ridge
- 1d_nwk_culverts
- 1d_nwk_pipes
- Proposed Swale

2d_bc_culverts

- CN
- SX

- 2d_code_bldgs

Project Title
Blayney Multipurpose Service

Drawing Title
TUFLOW Model Setup - Design

Job No	Figure No
295289	**Figure 5**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 50 100 150 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client
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Health Infrastructure

Consultant
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Disclaimer

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Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 2d_sa_pits
- 2d_sa
- 1d_bc
- 2d_bc_B_HX_R

2d_bc_culverts
- CN
- SX

2d_bc_B_HX_L
- CN
- HX

1d_nwk_channels
- W
- S
- B

- 2d_code_bldgs

Project Title
Blayney Multipurpose Service

Drawing Title
TUFLOW Model Boundary Conditions - Design

Job No	Figure No
295289	**Figure 6**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 50 100 150 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
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Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 2d_zsh_gully
- 2d_zsh_ridge

Proposed Works

- Building Footprint
- Civil Works

LiDAR (m AHD)

900

860

Project Title

Blayney Multipurpose Service

Drawing Title

TUFLOW Model Topography - Design

Job No	Figure No
295289	**Figure 7**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 50 100 150 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client

NSW GOVERNMENT
Health Infrastructure

Consultant

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Disclaimer

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Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 2d_code_bldgs

2d_materials

- Roads (n = 0.015)
- Urban Area (n = 0.200)
- Waterways (n = 0.05)
- Wetlands (n = 0.120)
- Dense Vegetation (n = 0.120)

Project Title
Blayney Multipurpose Service

Drawing Title
TUFLOW Model Roughness - Design

Job No	Figure No
295289	**Figure 8**
Coordinate System **GDA2020 MGA Zone 55**	Drawing Status **Draft**

Scale
0 50 100 150 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
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Sources: Data.NSW, Google

Appendix B

Existing Conditions Results

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 20% AEP Depth

Job No	Figure No
295289	**Figure 9**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 5% AEP Depth

Job No	Figure No
295289	**Figure 10**
Coordinate System **GDA2020 MGA Zone 55**	Drawing Status **Draft**

Scale

0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client

NSW GOVERNMENT
Health Infrastructure

Consultant

ARUP
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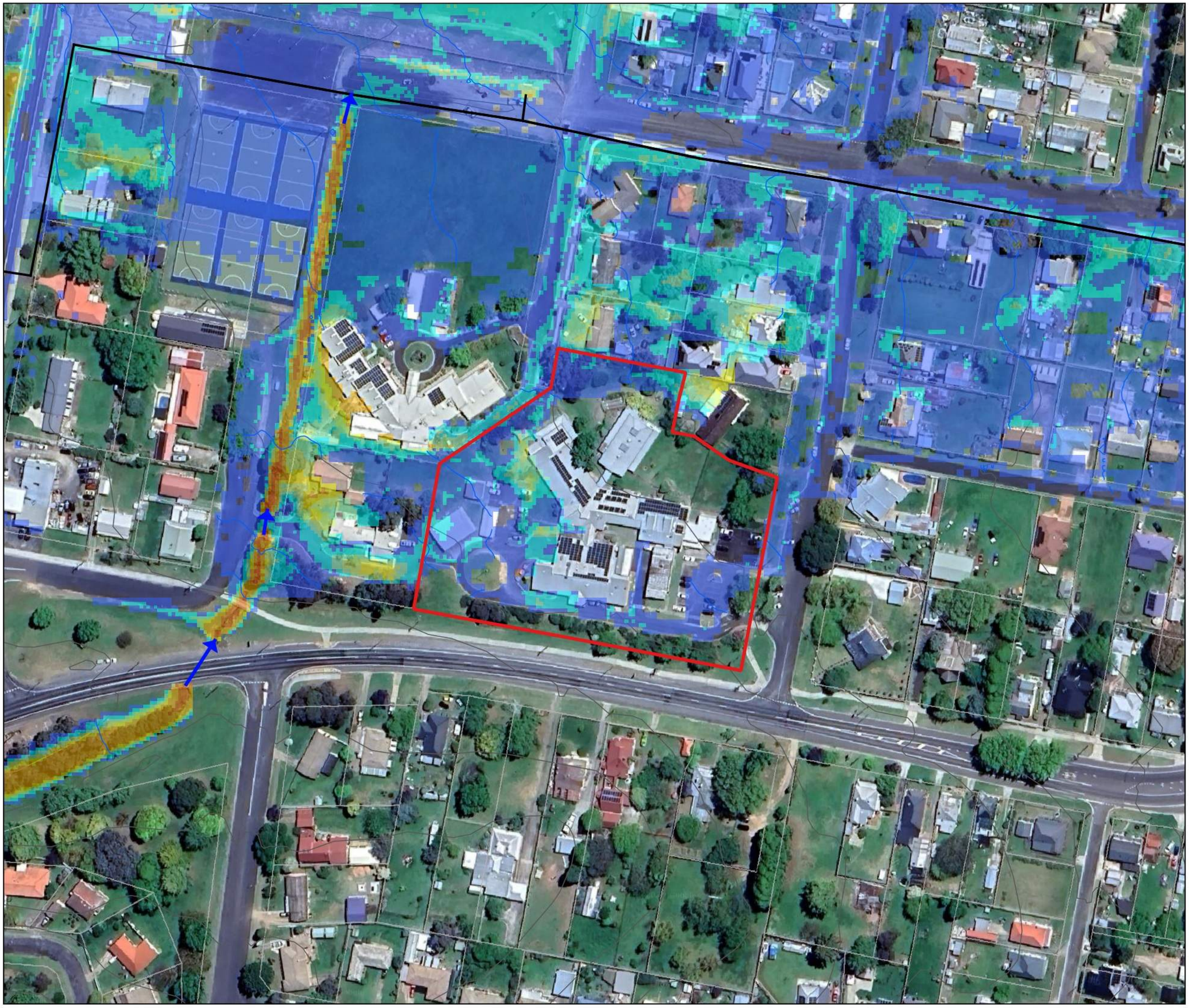
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Existing 1% AEP Depth

Job No	Figure No
295289	**Figure 11**
Coordinate System **GDA2020** **MGA Zone 55**	Drawing Status **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
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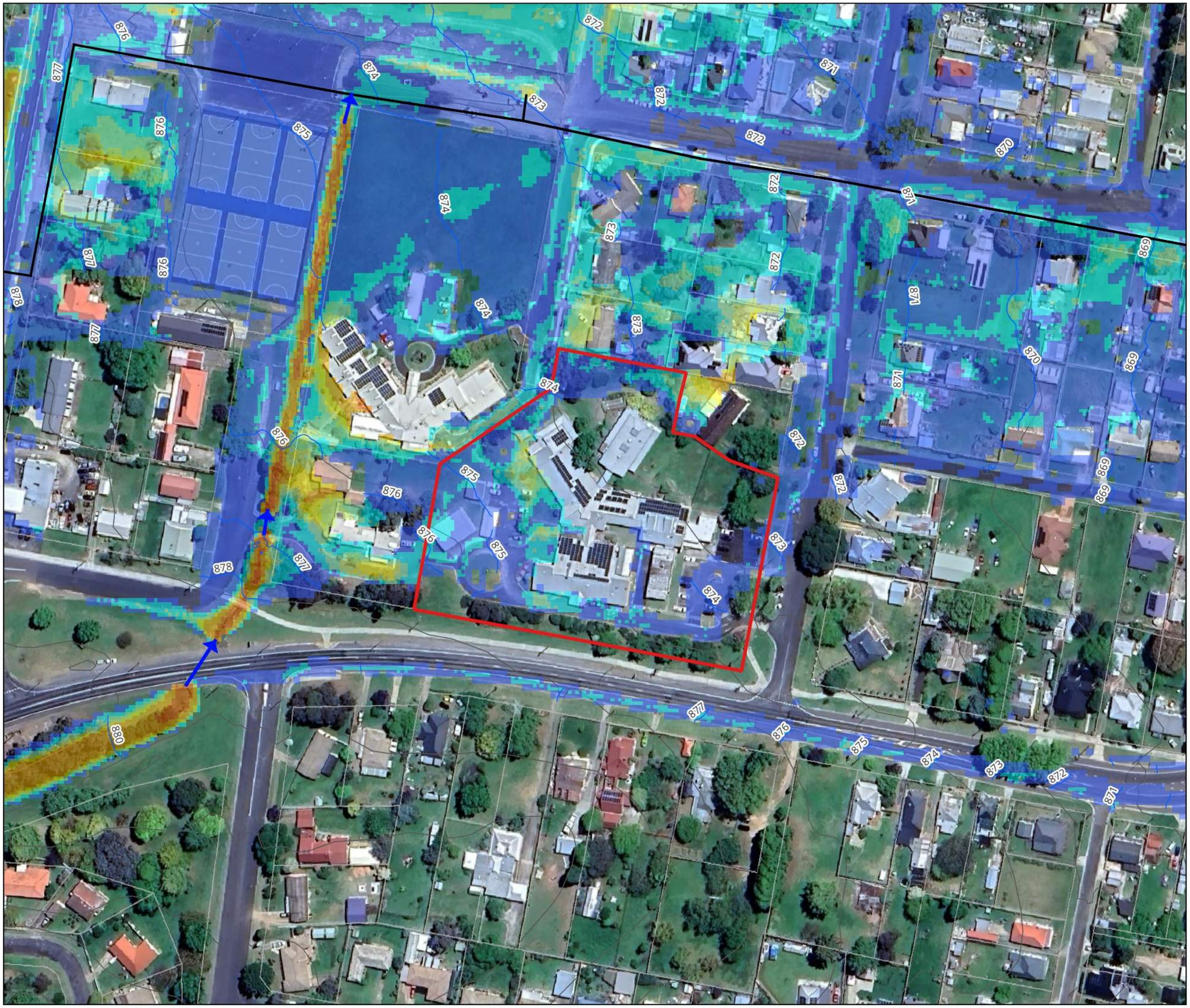
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 1% AEP + CC Depth

Job No	Figure No
295289	**Figure 12**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

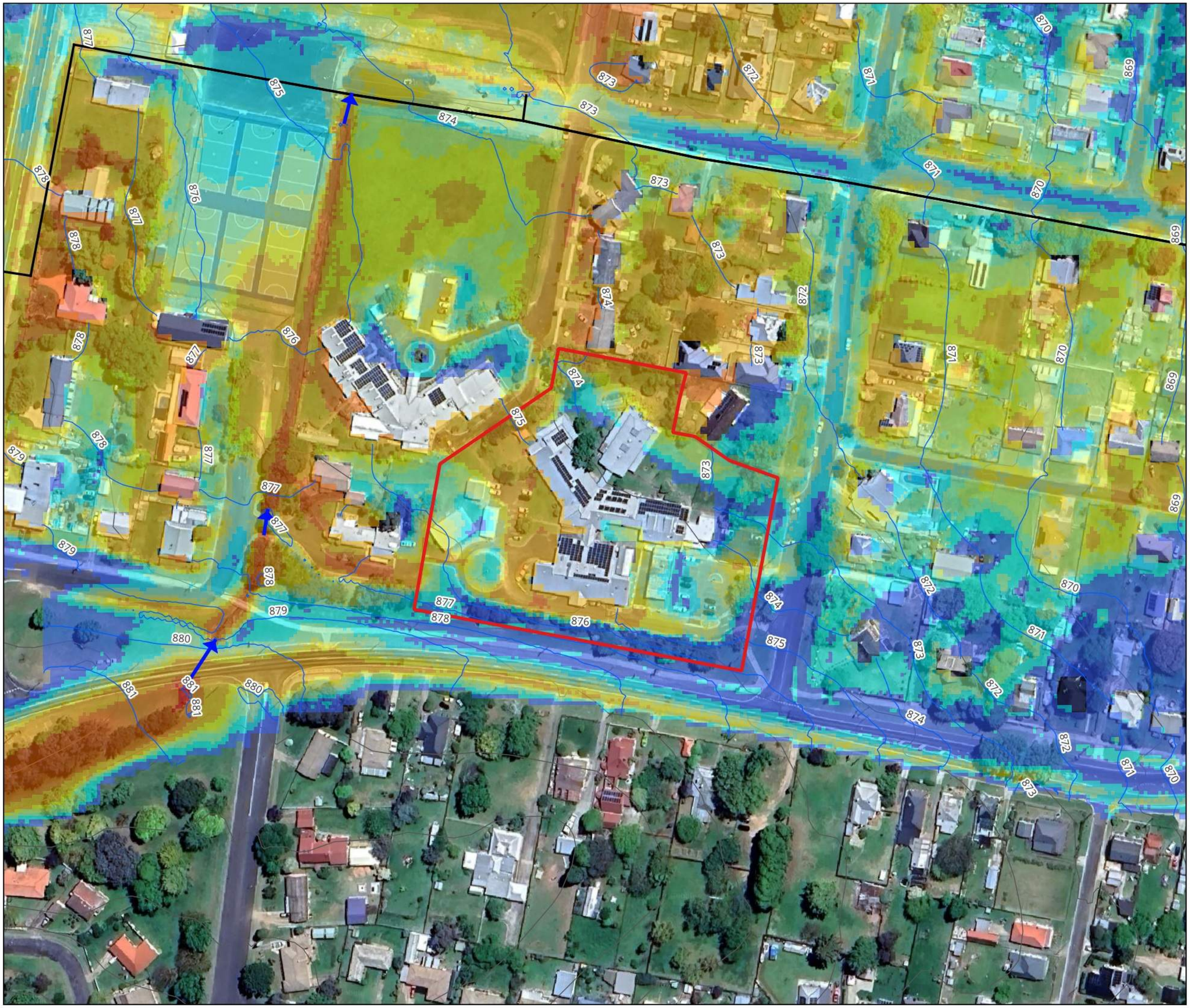
Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google

N



Project Title

Blayney Multipurpose Service

Drawing Title

Existing PMF Depth

Job No	Figure No
295289	**Figure 13**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client

NSW GOVERNMENT
Health Infrastructure

Consultant

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Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Level (m AHD)
890
860

- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Existing 20% AEP Water Level

Job No	Figure No
295289	**Figure 14**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Level (m AHD)

- 890
- 860

Water Level Contour (m AHD)

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 5% AEP Water Level

Job No	Figure No
295289	**Figure 15**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale: 0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Level (m AHD)

- 890
- 860
- Water Level Contour (m AHD)

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 1% AEP Water Level

Job No	Figure No
295289	**Figure 16**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

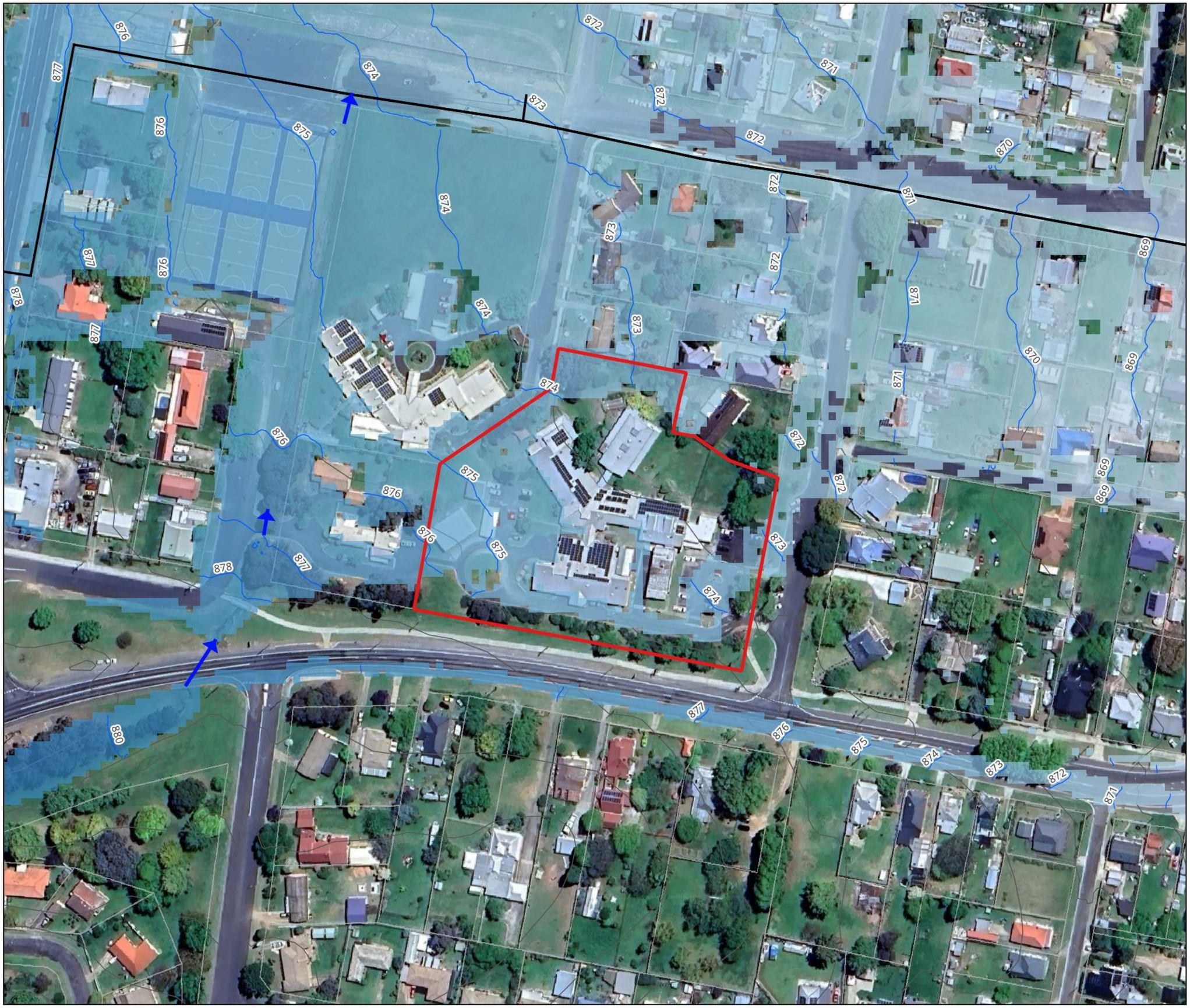
Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Level (m AHD)

- 890
- 860
- Water Level Contour (m AHD)

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 1% AEP + CC Water Level

Job No	Figure No
295289	**Figure 17**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

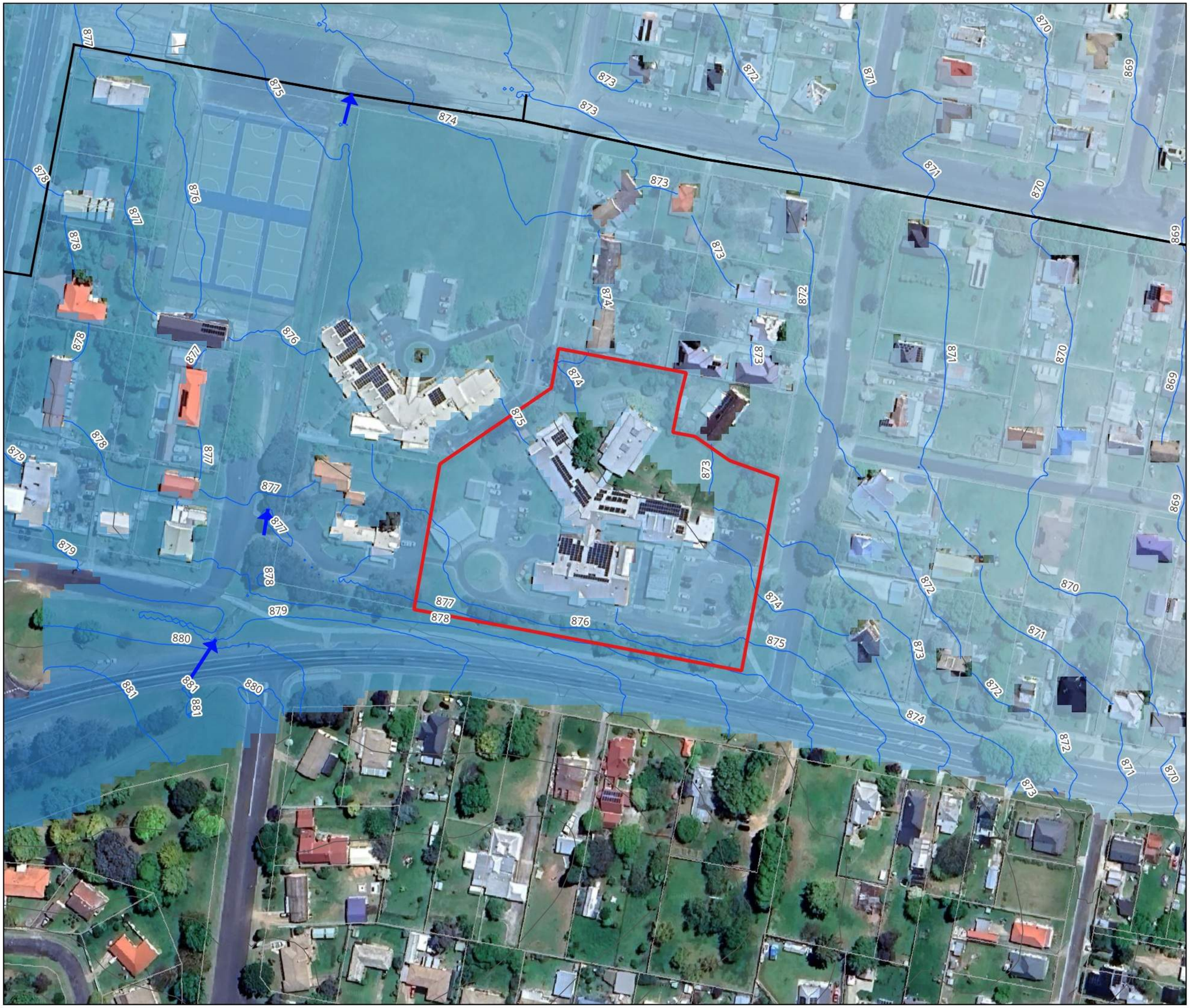
Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Level (m AHD)

- 890
- 860
- Water Level Contour (m AHD)

Project Title

Blayney Multipurpose Service

Drawing Title

Existing PMF Water Level

Job No	Figure No
295289	**Figure 18**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client

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Health Infrastructure

Consultant

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Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 20% AEP Velocity

Job No	Figure No
295289	**Figure 19**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale: 0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 5% AEP Velocity

Job No	Figure No
295289	**Figure 20**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

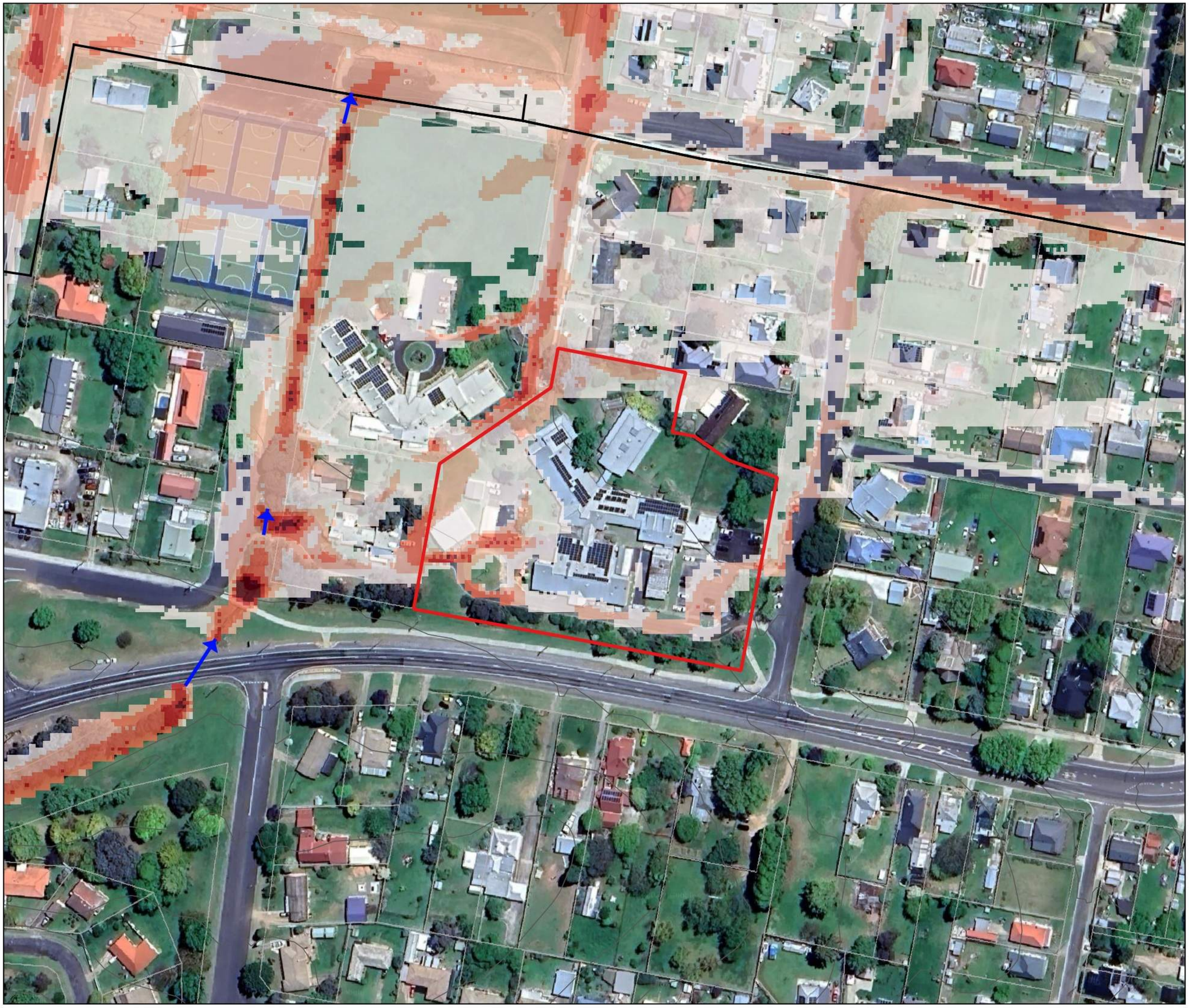
Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 1% AEP Velocity

Job No	Figure No
295289	**Figure 21**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client

NSW GOVERNMENT
Health Infrastructure

Consultant

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VIC 3008, Australia

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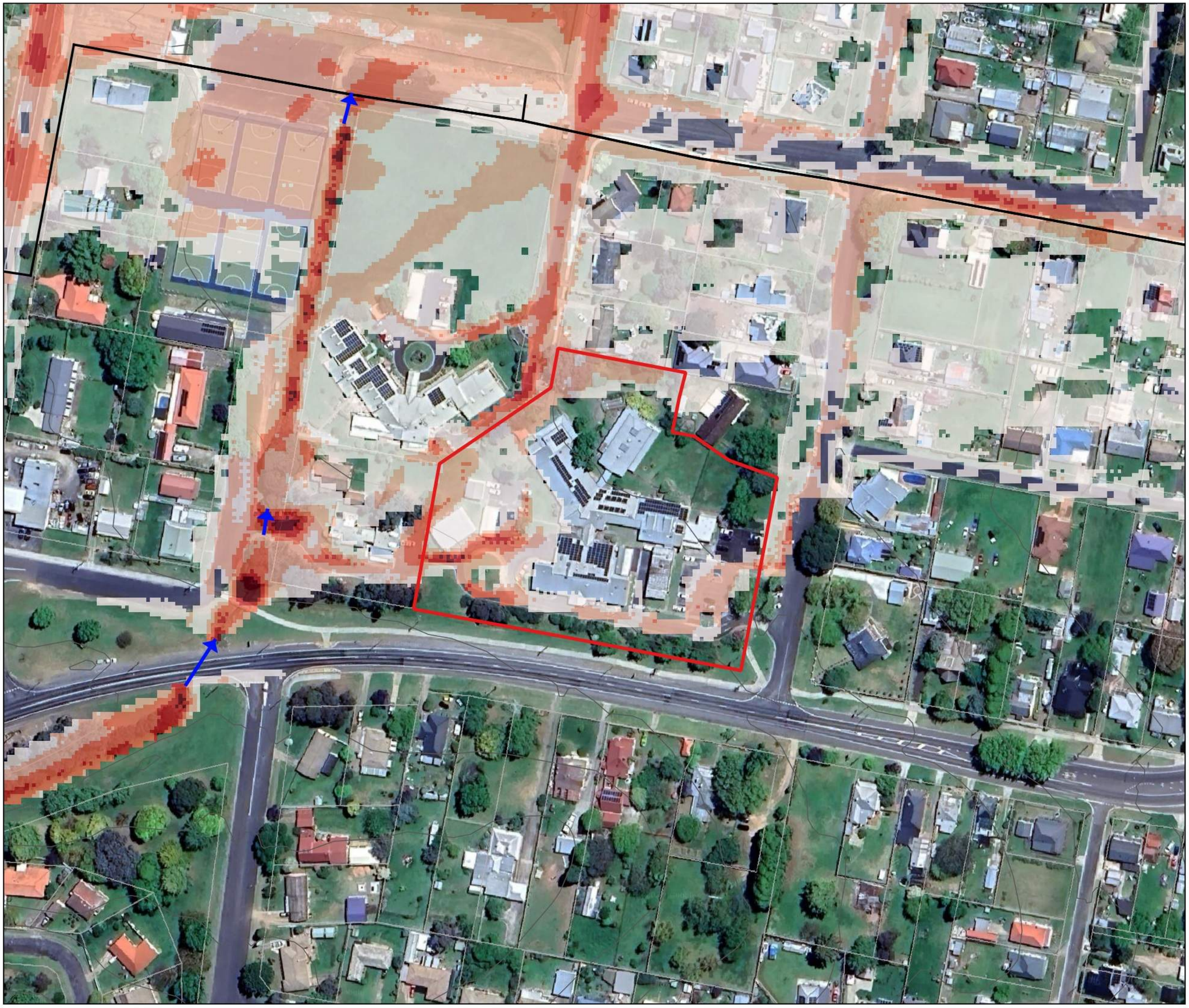
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title
Blayney Multipurpose Service

Drawing Title
Existing 1% AEP + CC Velocity

Job No	Figure No
295289	**Figure 22**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

Disclaimer

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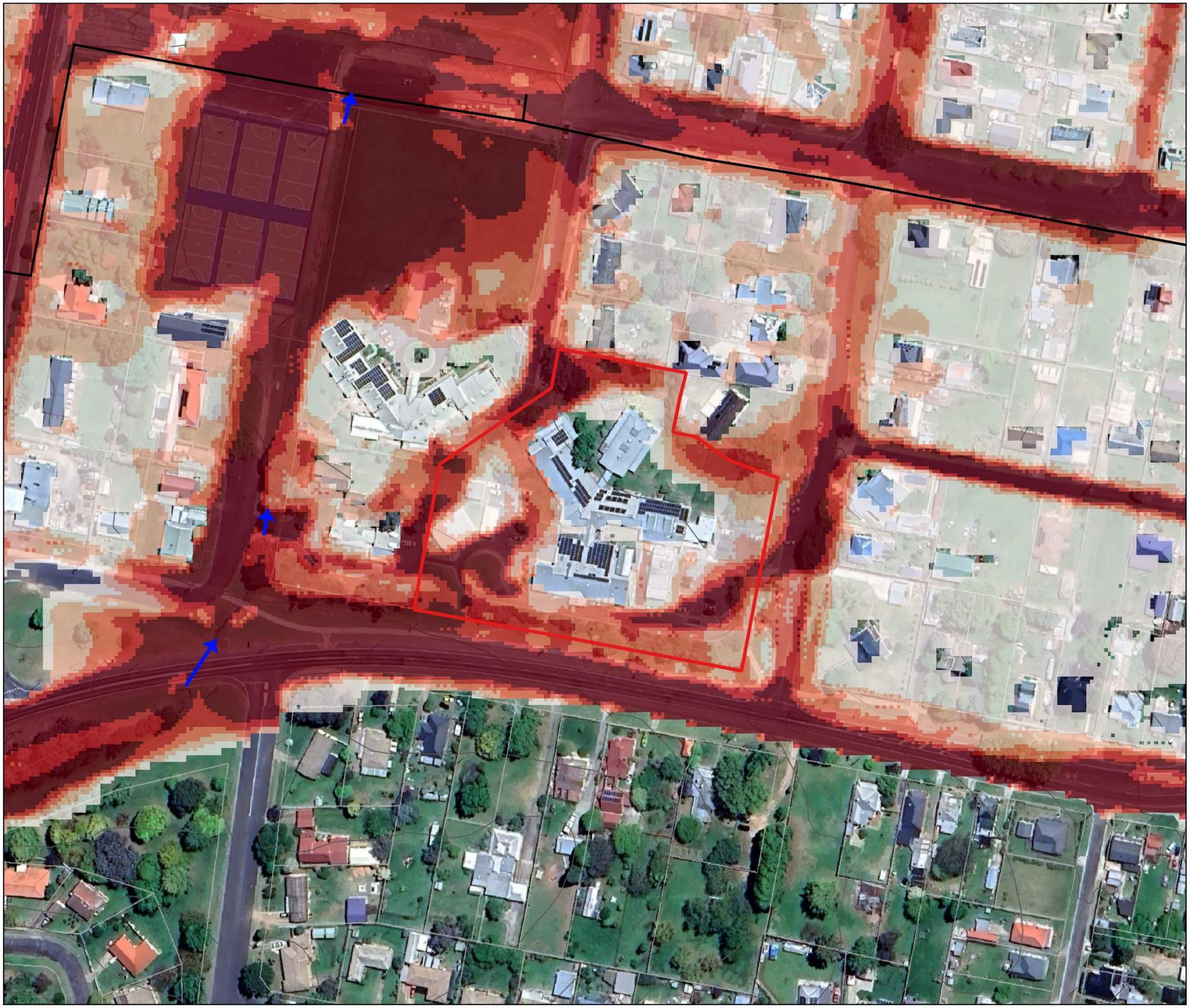
Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title
Blayney Multipurpose Service

Drawing Title
Existing PMF Velocity

Job No	Figure No
295289	**Figure 23**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Hazard

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

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 20% AEP Flood Hazard

Job No	Figure No
295289	**Figure 24**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client

NSW GOVERNMENT
Health Infrastructure

Consultant

ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

Disclaimer

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Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Hazard

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

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 5% AEP Flood Hazard

Job No	Figure No
295289	**Figure 25**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

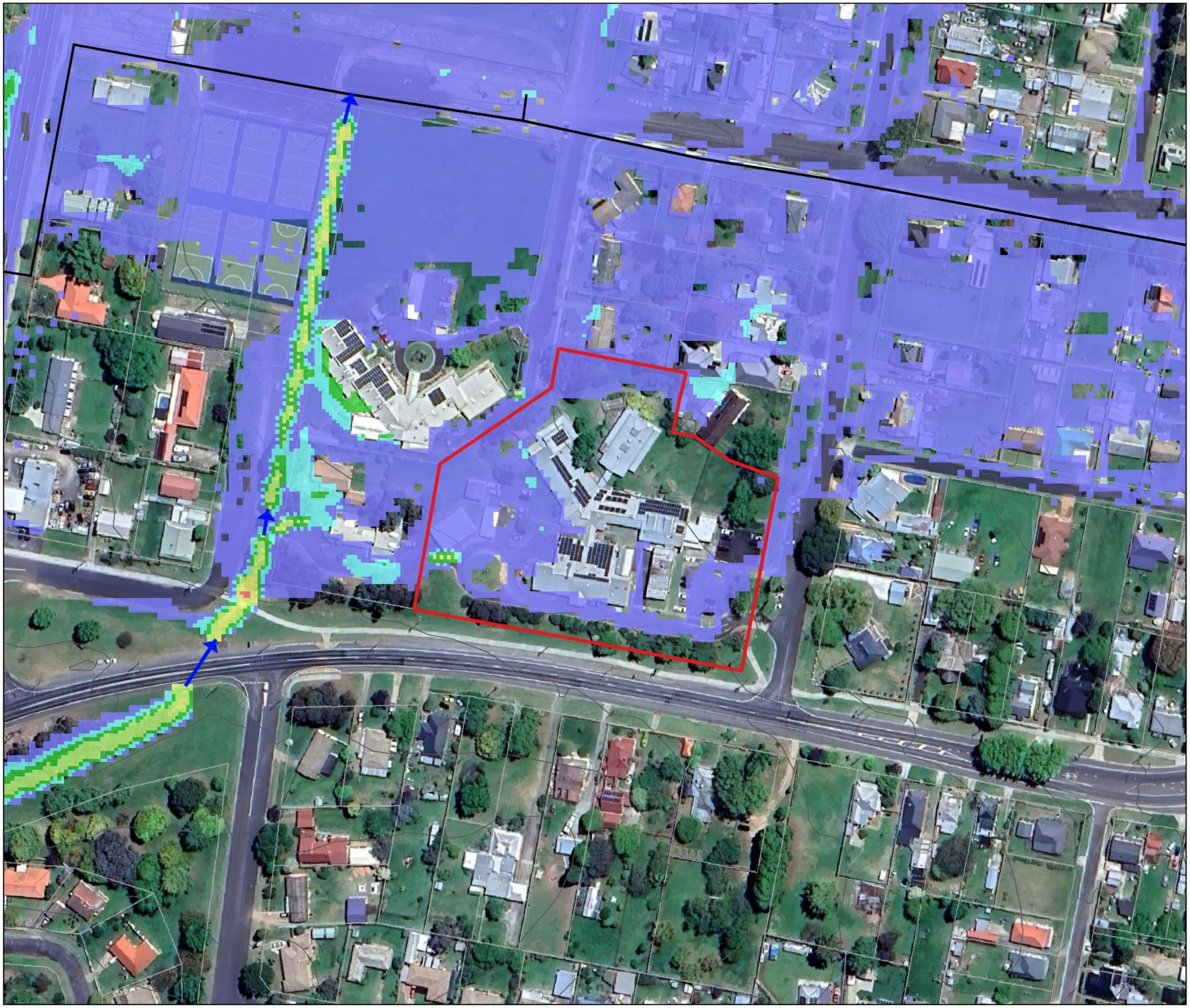
Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Hazard

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

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 1% AEP Flood Hazard

Job No	Figure No
295289	**Figure 26**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

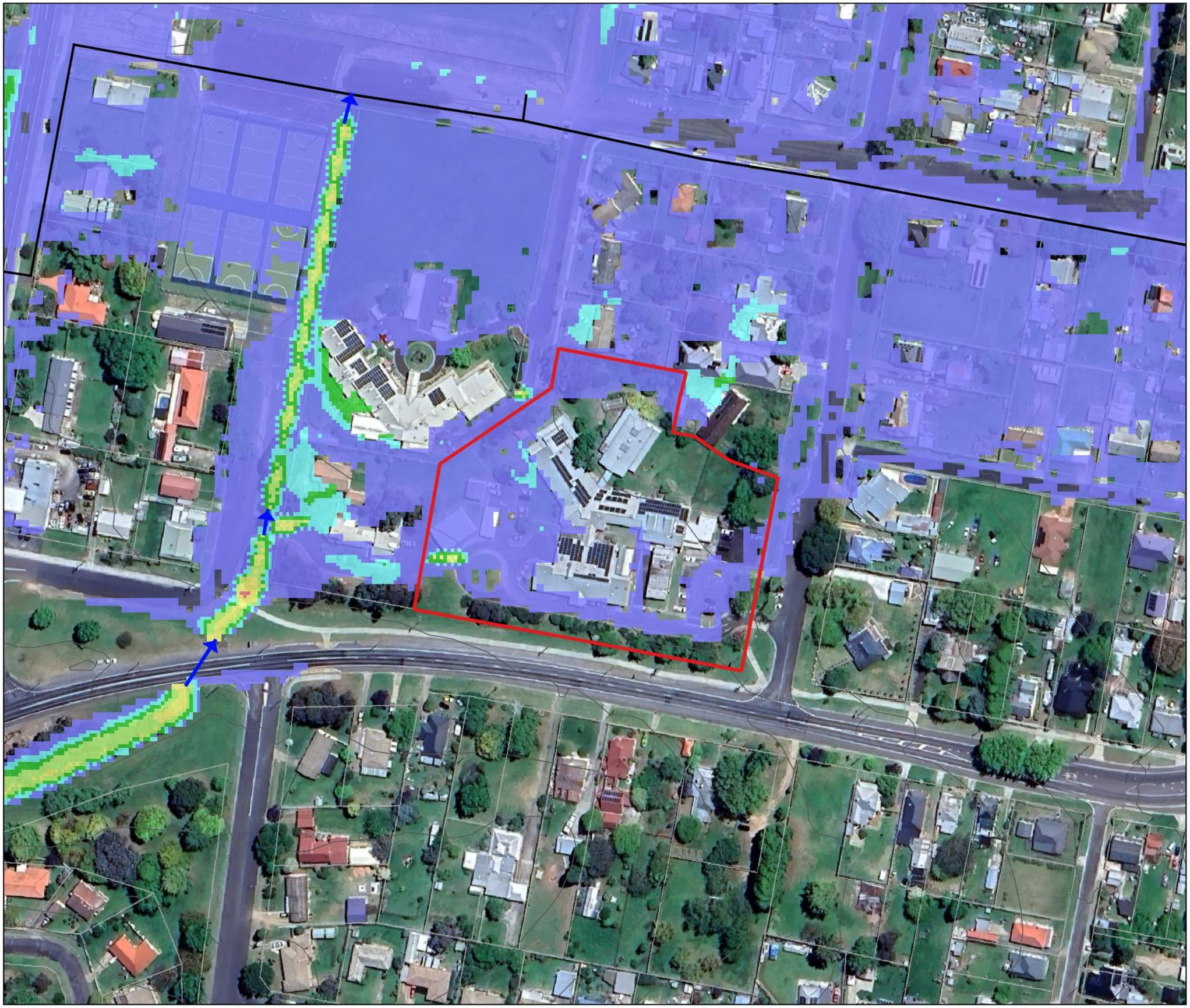
Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Hazard

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

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 1% AEP + CC Flood Hazard

Job No	Figure No
295289	**Figure 27**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

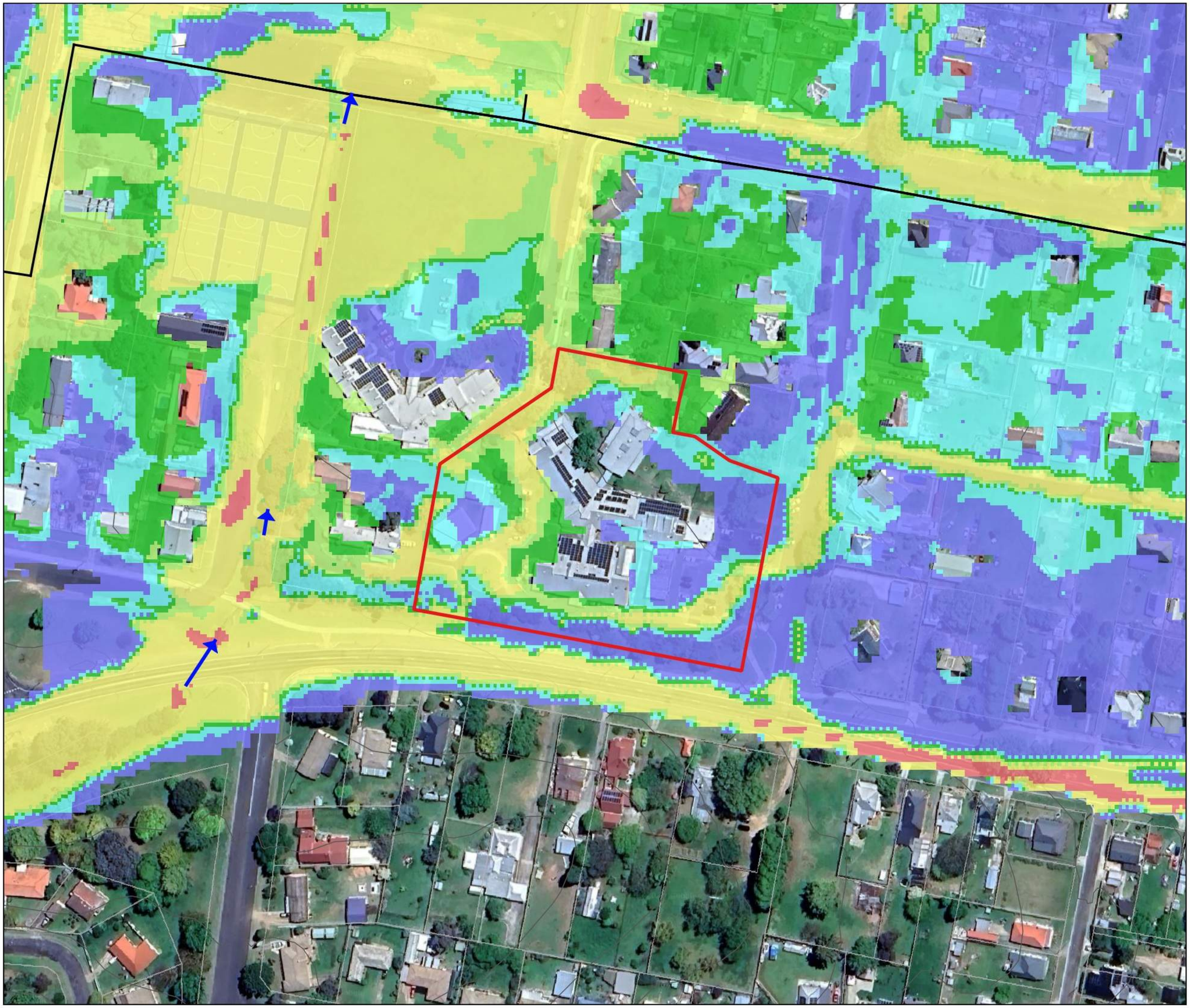
Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Hazard

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

Project Title

Blayney Multipurpose Service

Drawing Title

Existing PMF Flood Hazard

Job No	Figure No
295289	**Figure 28**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	TH	JA

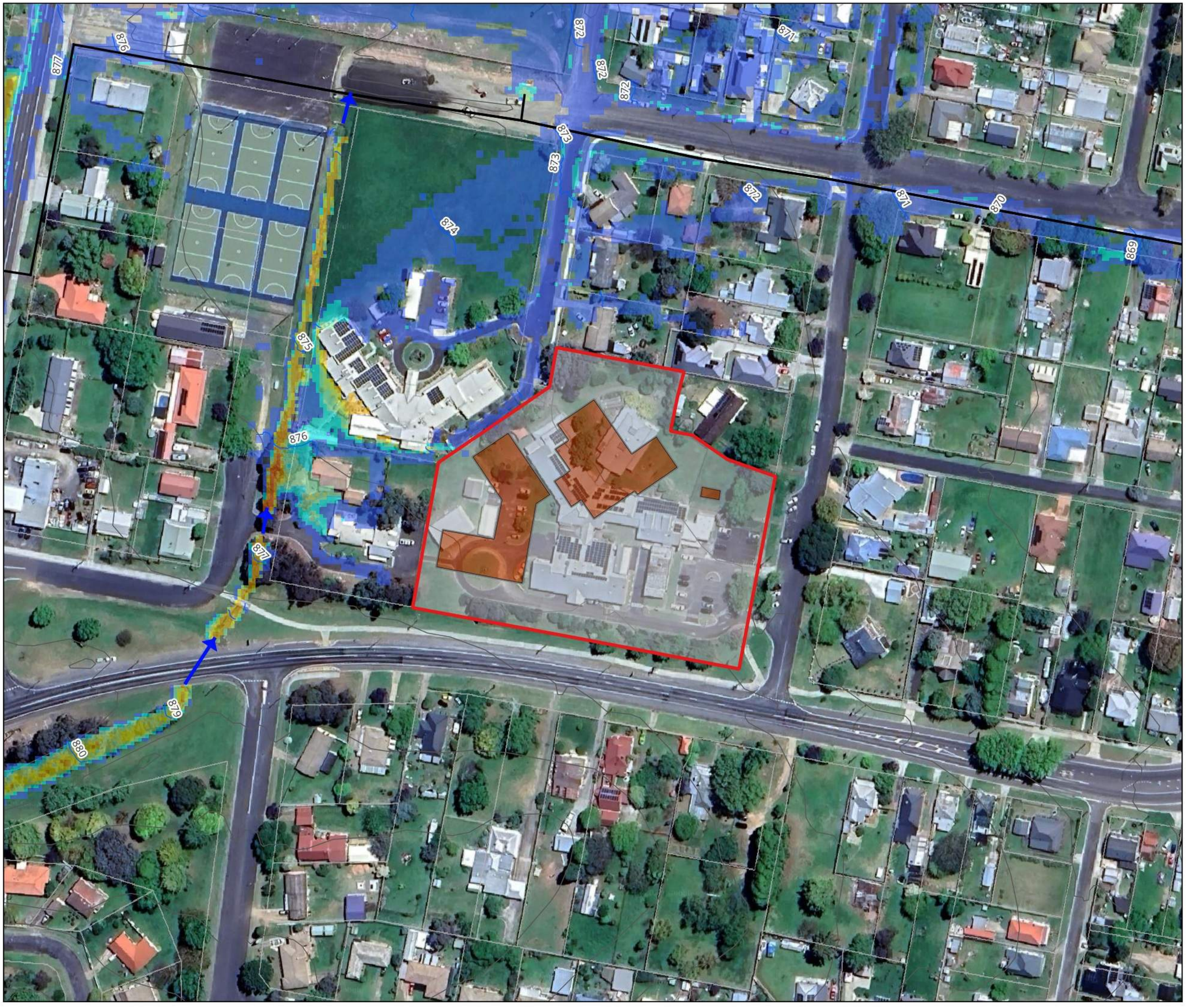
Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google

Appendix C

Proposed Conditions Results without mitigation



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 20% AEP Depth

Job No	Figure No
295289	**Figure 29**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 5% AEP Depth

Job No	Figure No
295289	**Figure 30**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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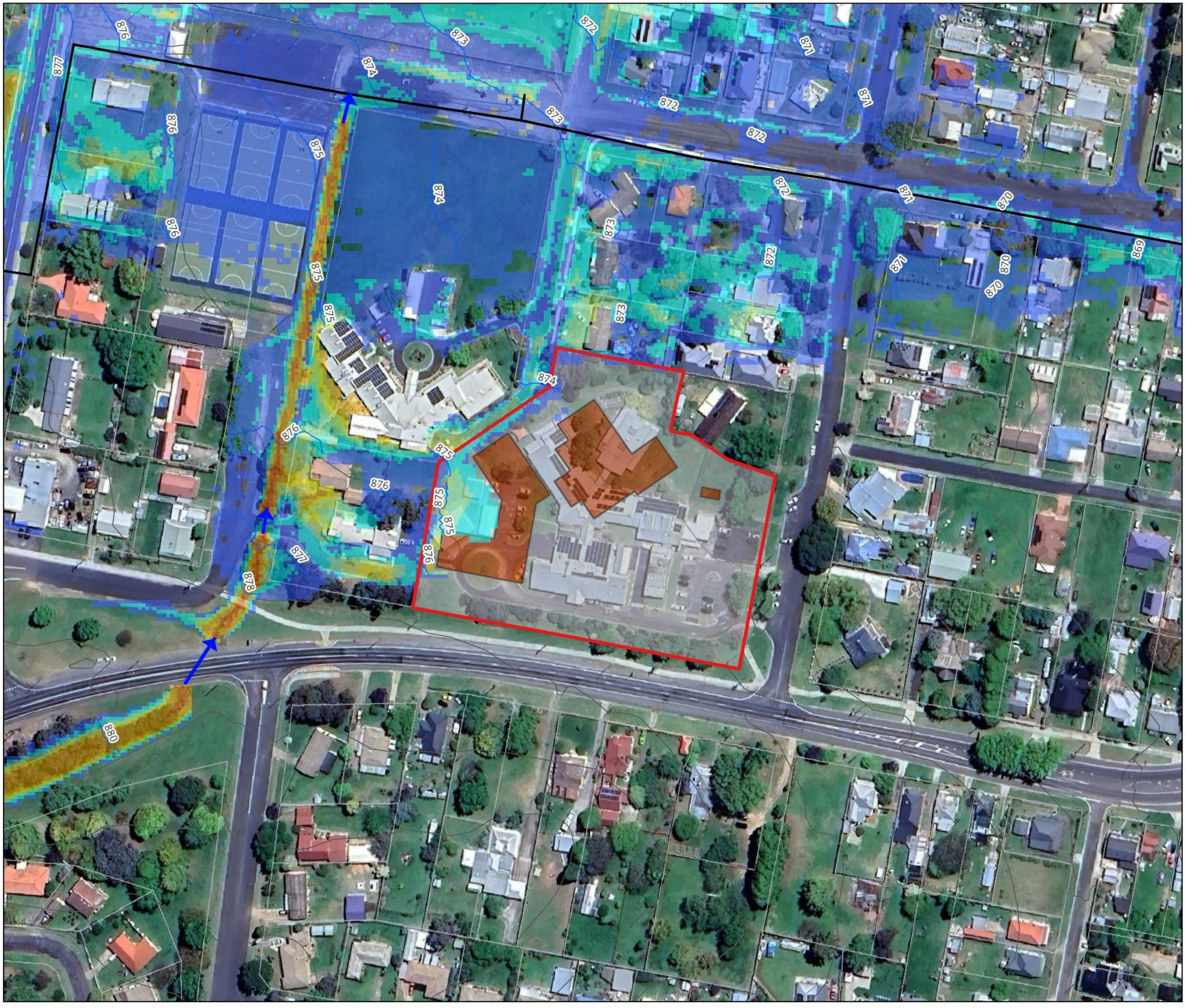
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 1% AEP Depth

Job No	Figure No
295289	**Figure 31**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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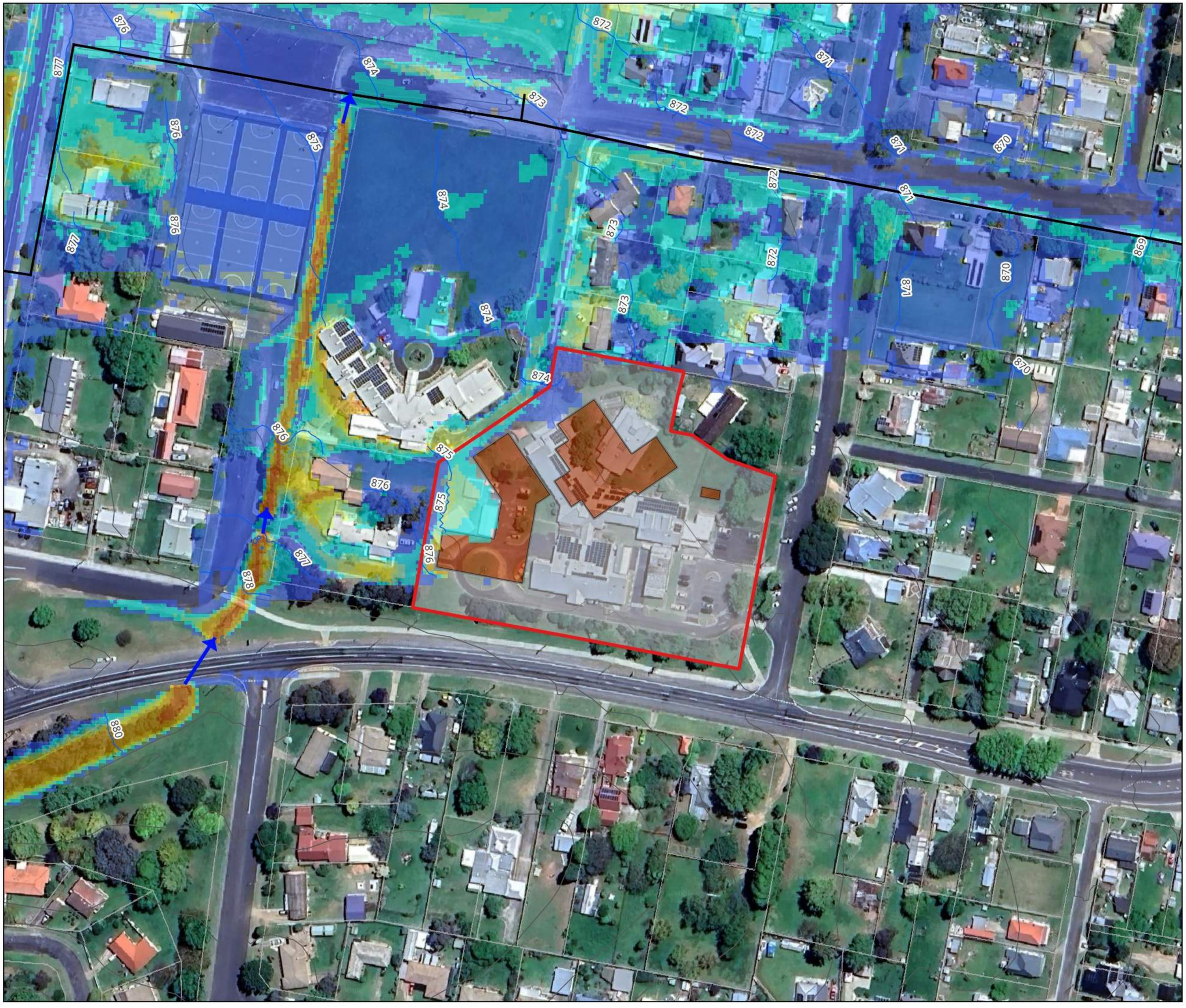
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 1% AEP + CC Depth

Job No	Figure No
295289	**Figure 32**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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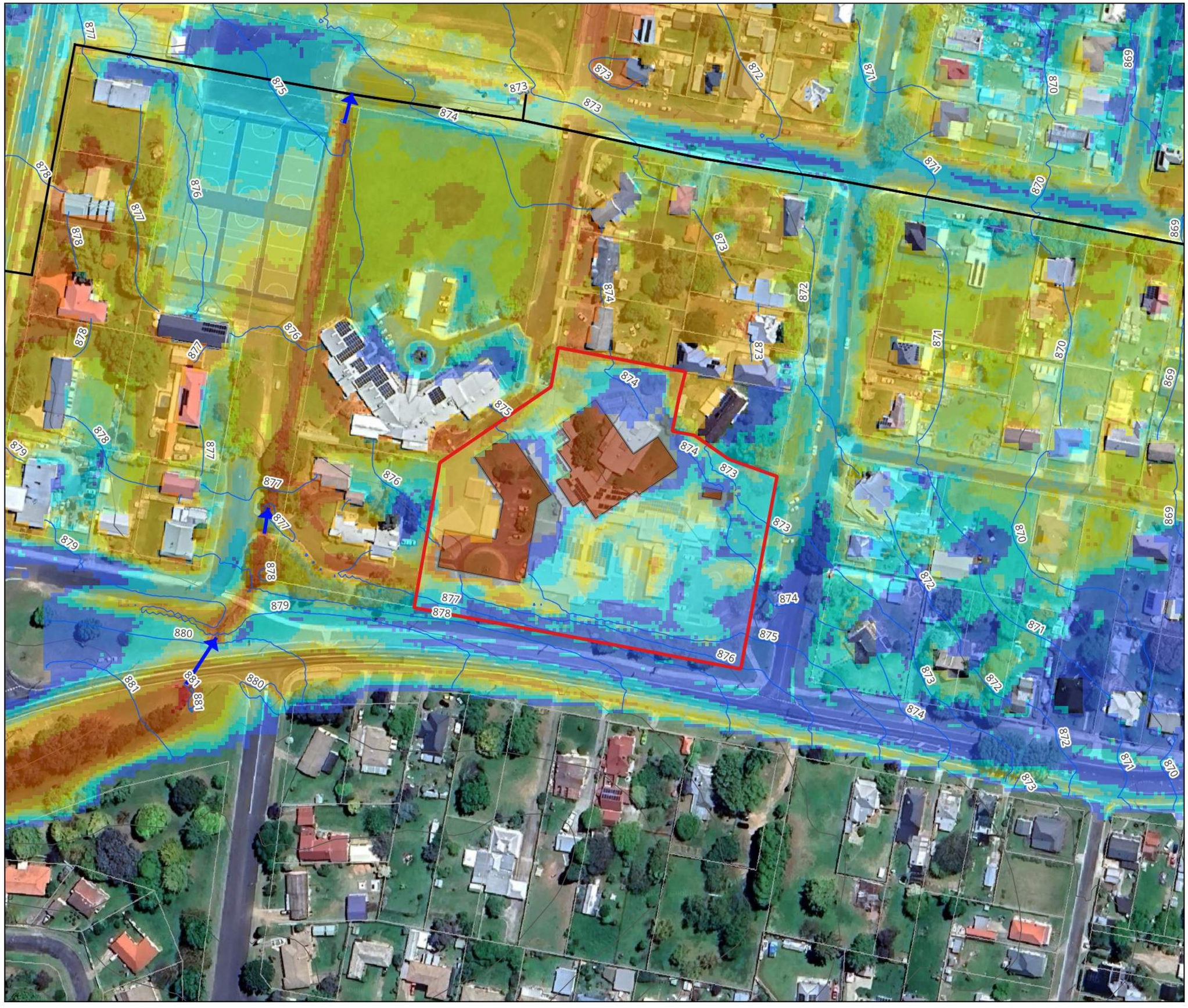
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design PMF Depth

Job No	Figure No
295289	**Figure 33**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

Disclaimer

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Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Level (m AHD)

890
860

- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 20% AEP Water Level

Job No	Figure No
295289	**Figure 34**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Level (m AHD)

- 890
- 860
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 5% AEP Water Level

Job No	Figure No
295289	**Figure 35**

Coordinate System	Drawing Status
GDA2020 MGA Zone 55	**Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT Health Infrastructure

Consultant
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Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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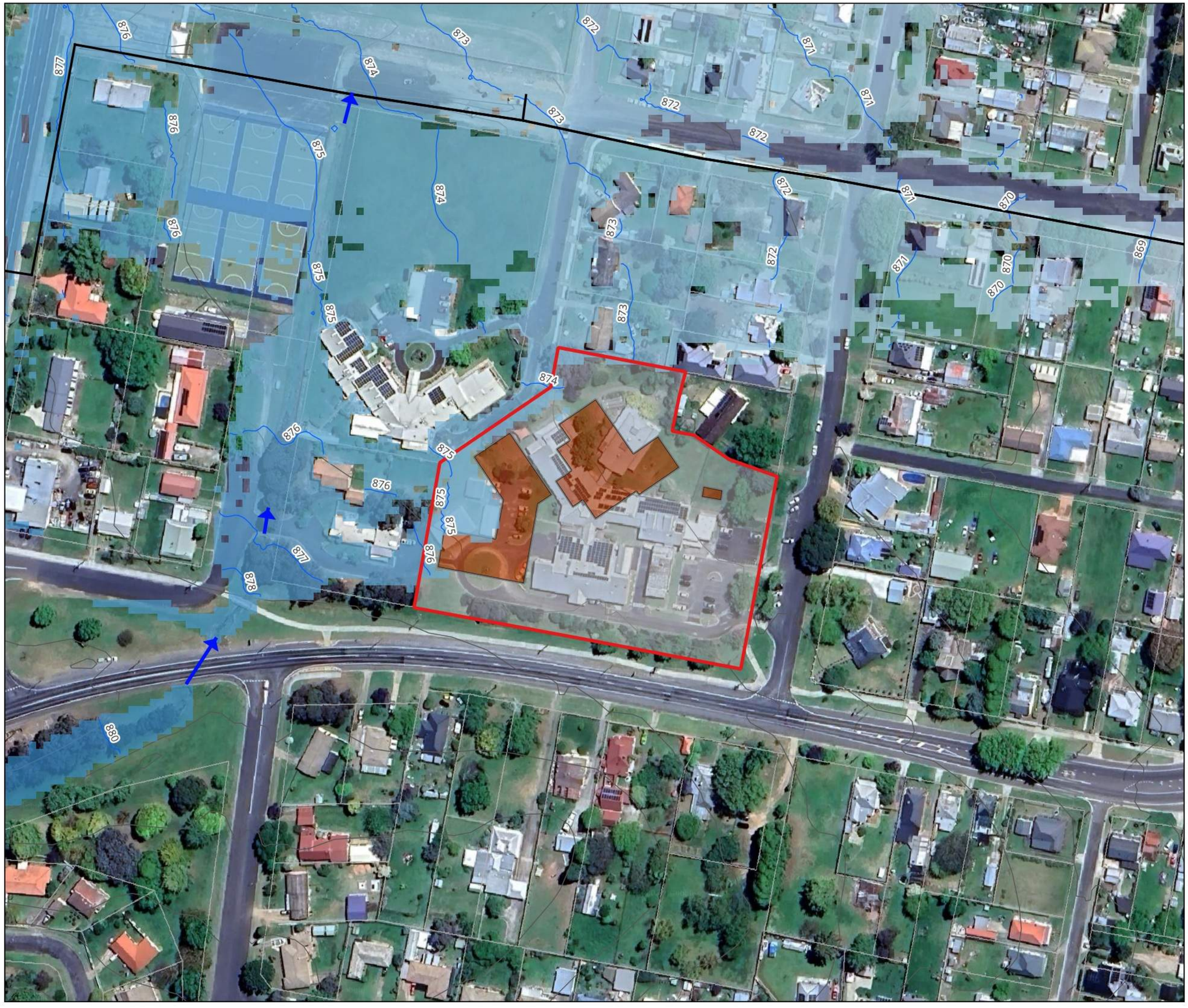
Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Level (m AHD)

- 890
- 860
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 1% AEP Water Level

Job No	Figure No
295289	**Figure 36**

Coordinate System	Drawing Status
GDA2020 MGA Zone 55	**Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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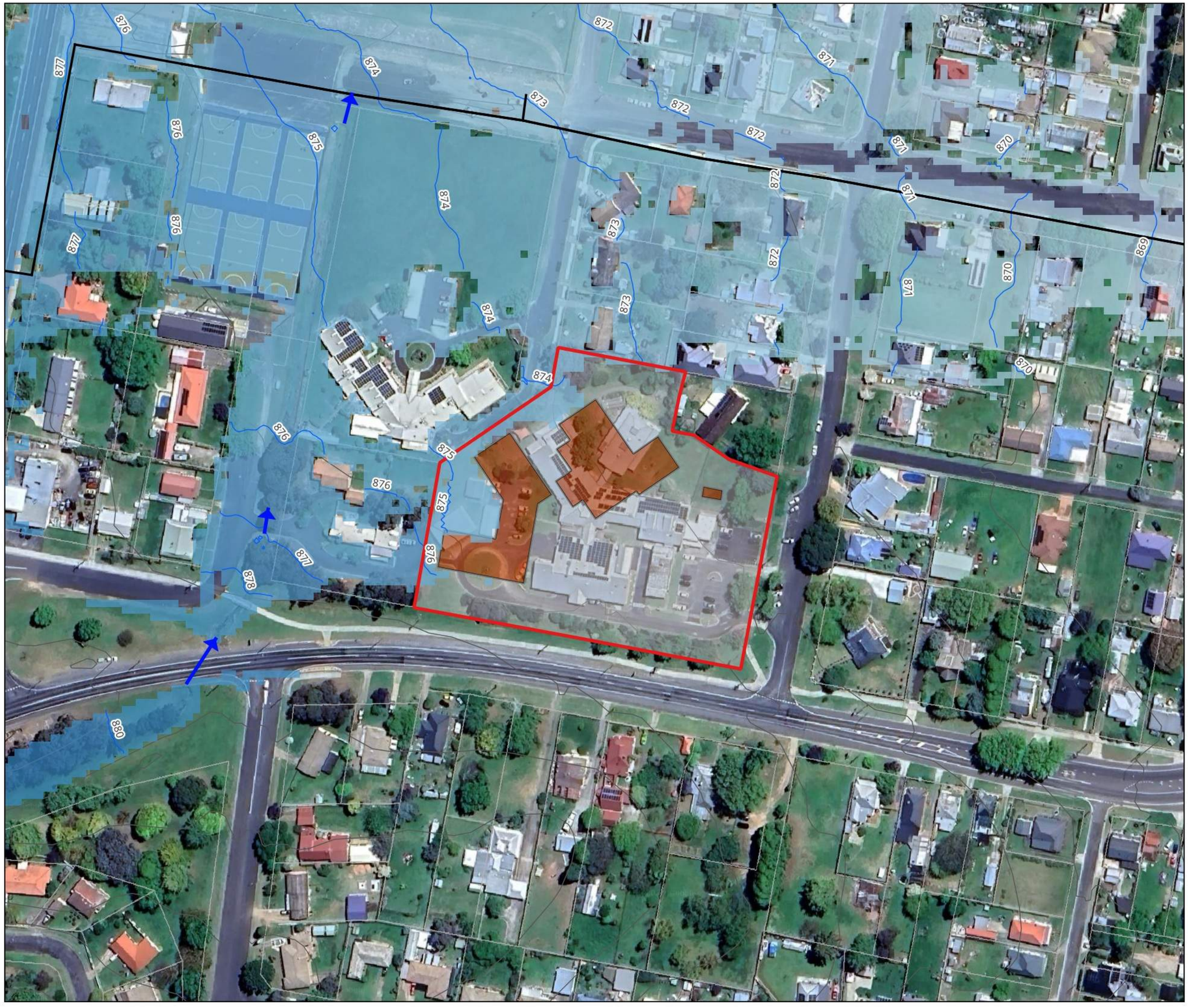
Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Level (m AHD)

- 890
- 860
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 1% AEP + CC Water Level

Job No	Figure No
295289	**Figure 37**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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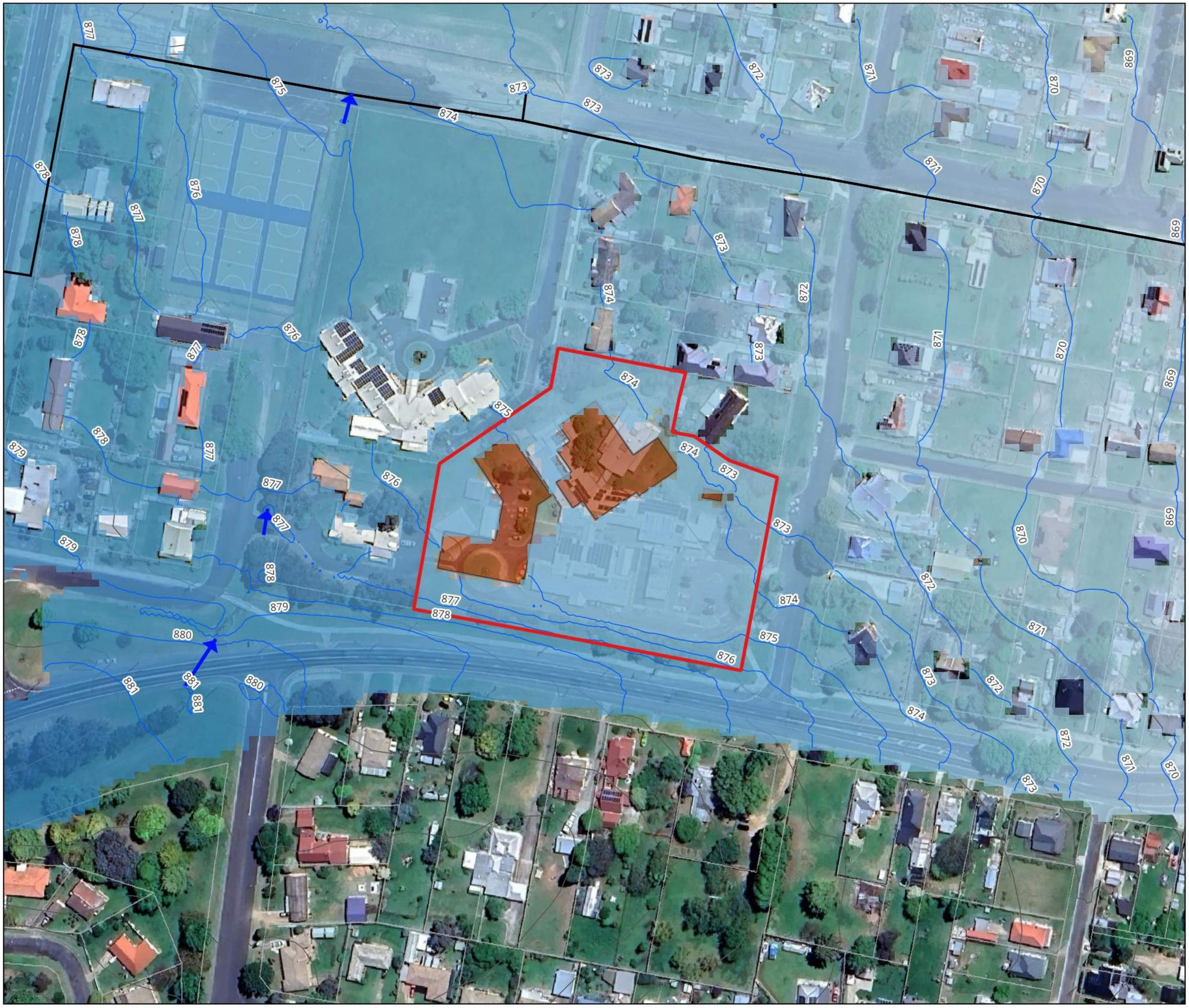
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Level (m AHD)

- 890
- 860
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design PMF Water Level

Job No	Figure No
295289	**Figure 38**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 20% AEP Velocity

Job No	Figure No
295289	**Figure 39**

Coordinate System	Drawing Status
GDA2020 MGA Zone 55	**Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 5% AEP Velocity

Job No	Figure No
295289	**Figure 40**

Coordinate System	Drawing Status
GDA2020 MGA Zone 55	**Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 1% AEP Velocity

Job No	Figure No
295289	**Figure 41**
Coordinate System **GDA2020 MGA Zone 55**	Drawing Status **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

Disclaimer

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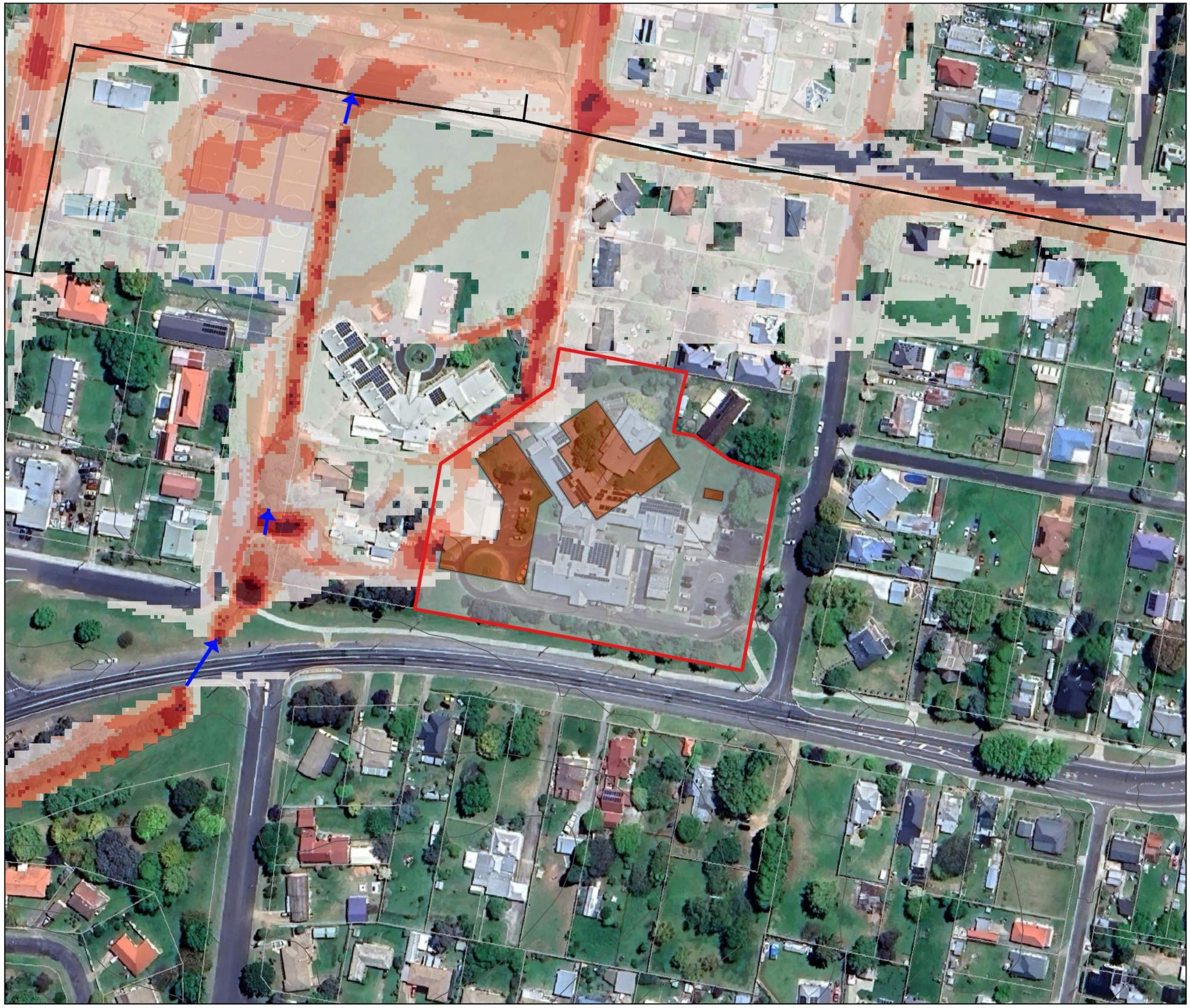
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 1% AEP + CC Velocity

Job No	Figure No
295289	**Figure 42**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

Disclaimer

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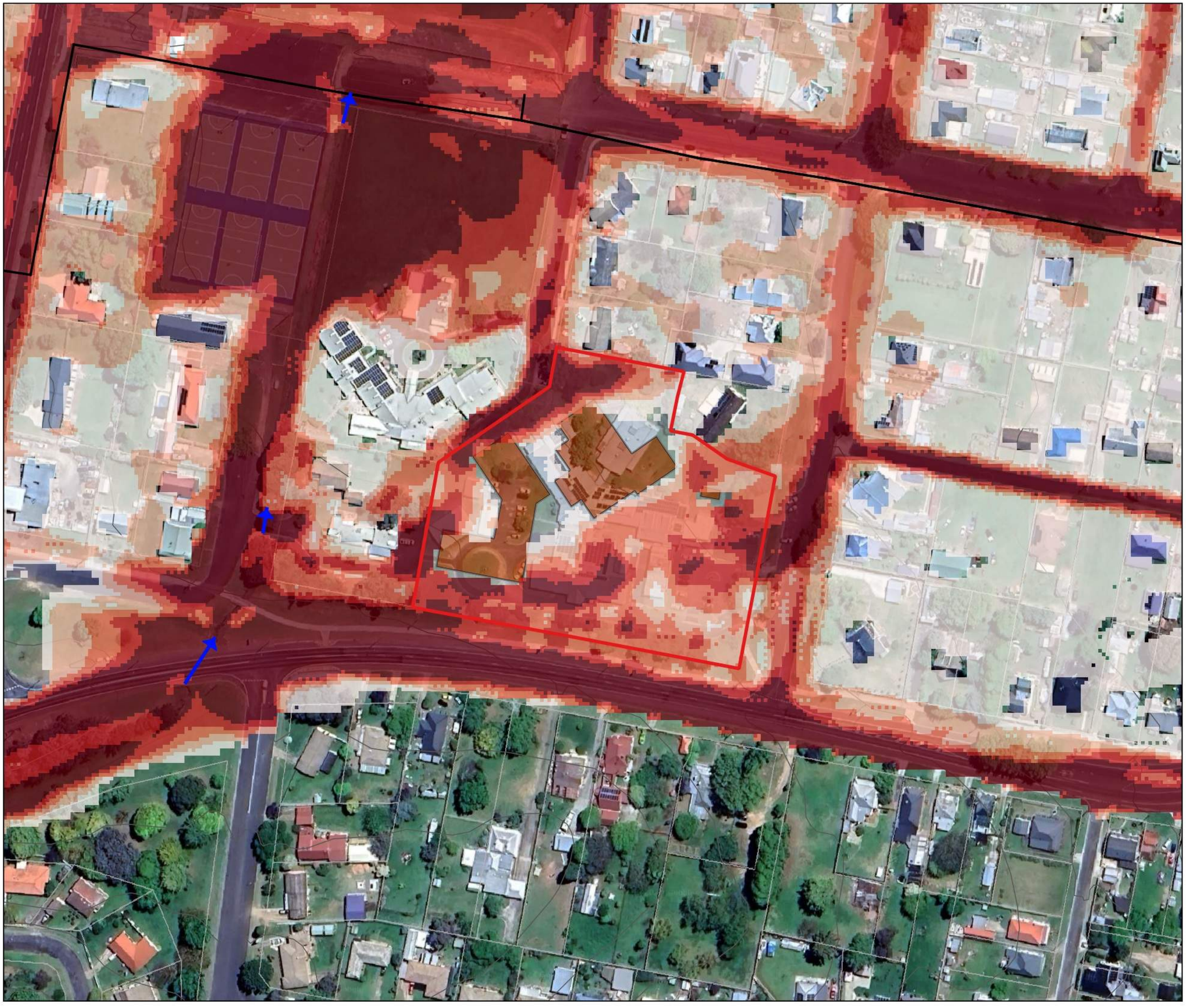
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design PMF Velocity

Job No	Figure No
295289	**Figure 43**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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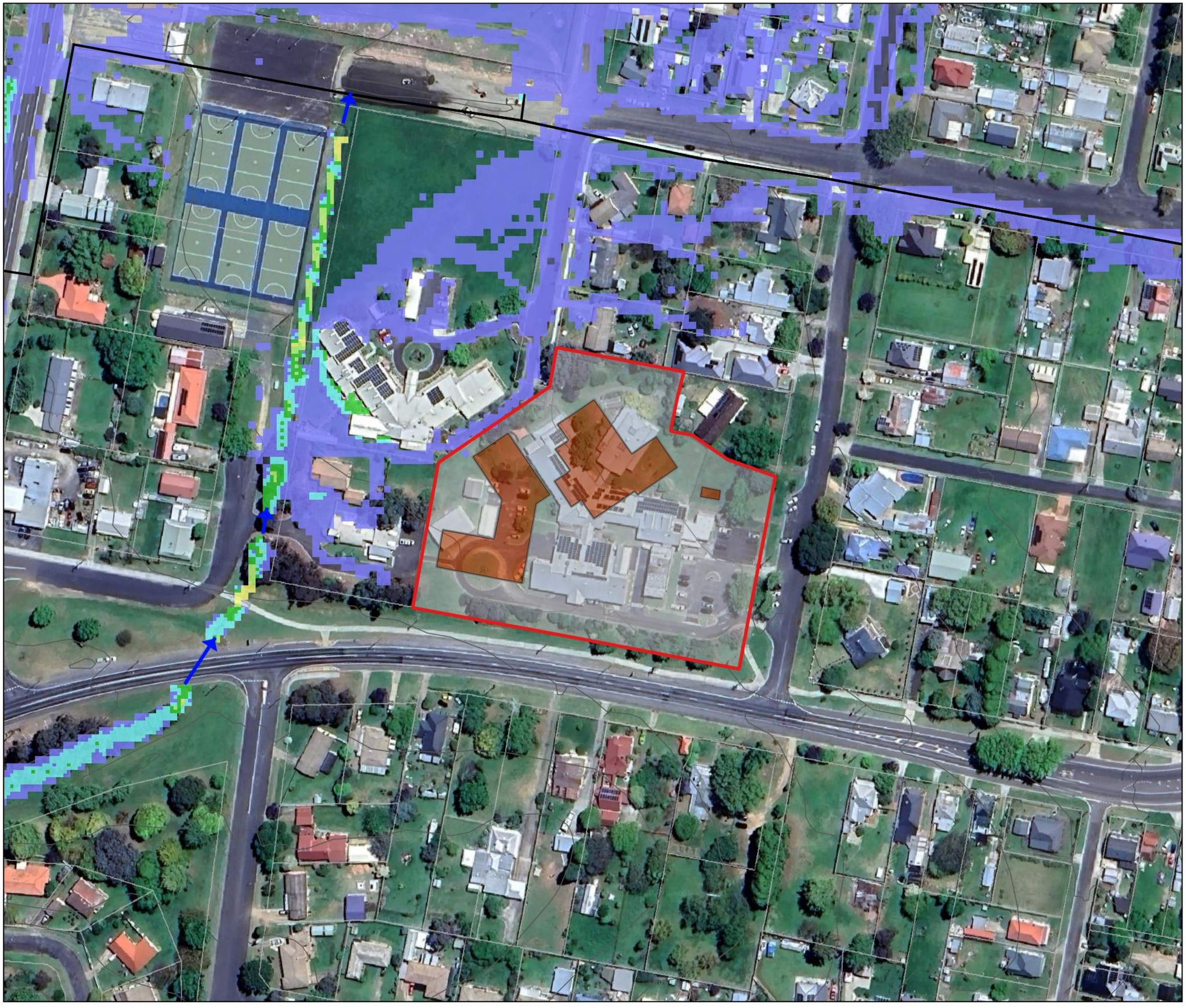
Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Hazard

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

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 20% AEP Flood Hazard

Job No	Figure No
295289	**Figure 44**

Coordinate System	Drawing Status
GDA2020 MGA Zone 55	**Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Hazard

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

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 5% AEP Flood Hazard

Job No	Figure No
295289	**Figure 45**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

Disclaimer

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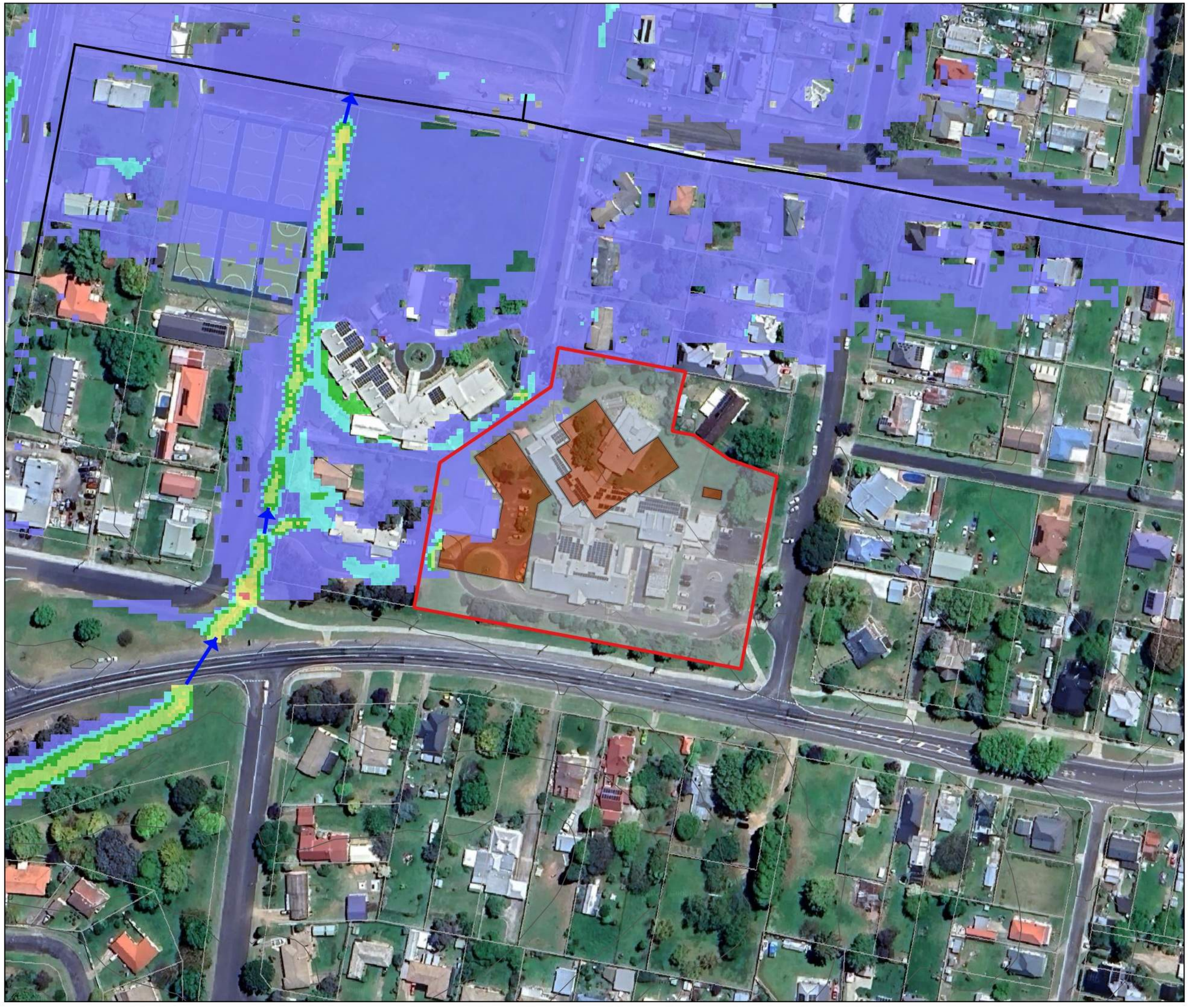
Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Hazard

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

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 1% AEP Flood Hazard

Job No	Figure No
295289	**Figure 46**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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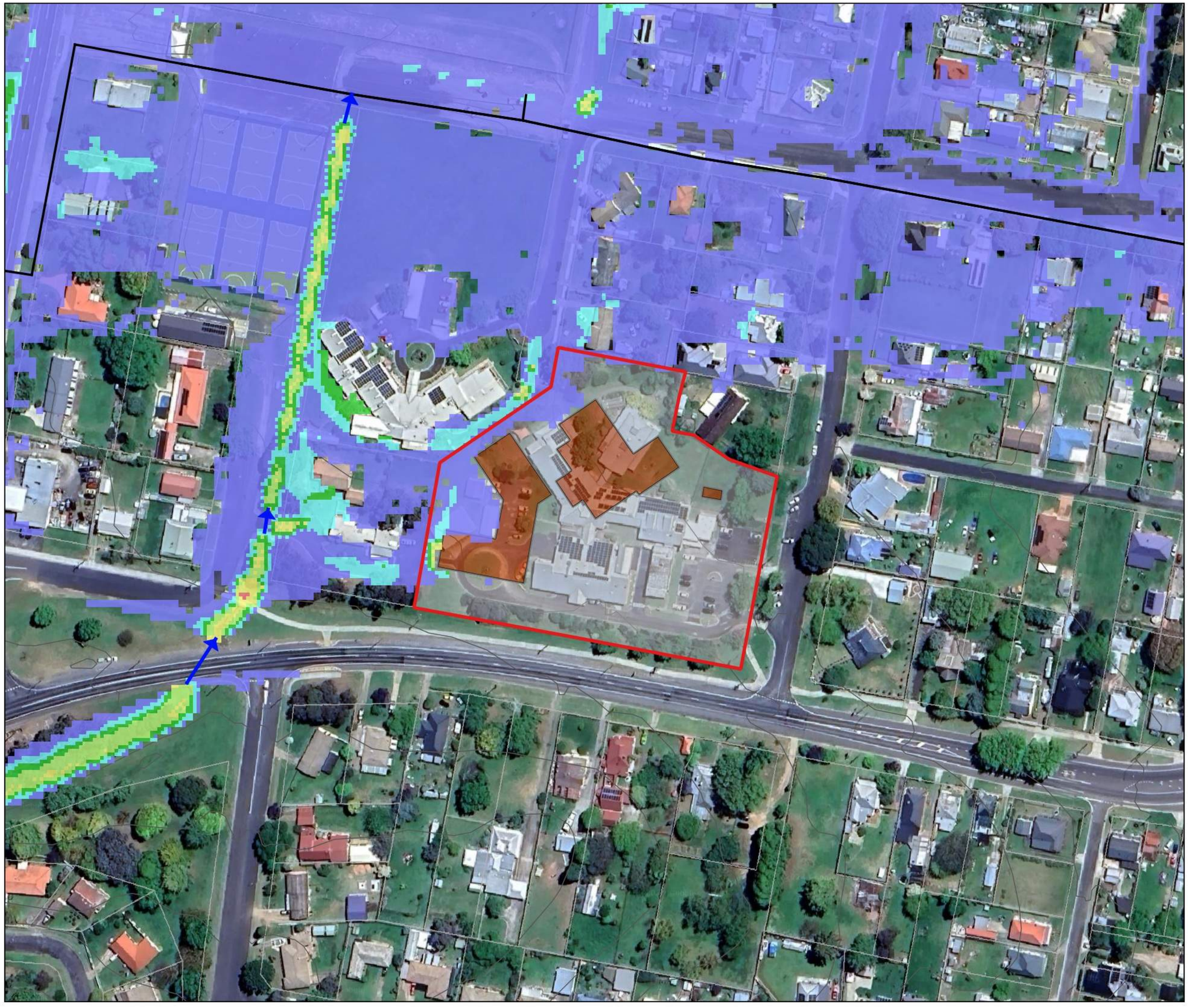
Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Hazard

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

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design 1% AEP + CC Flood Hazard

Job No	Figure No
295289	**Figure 47**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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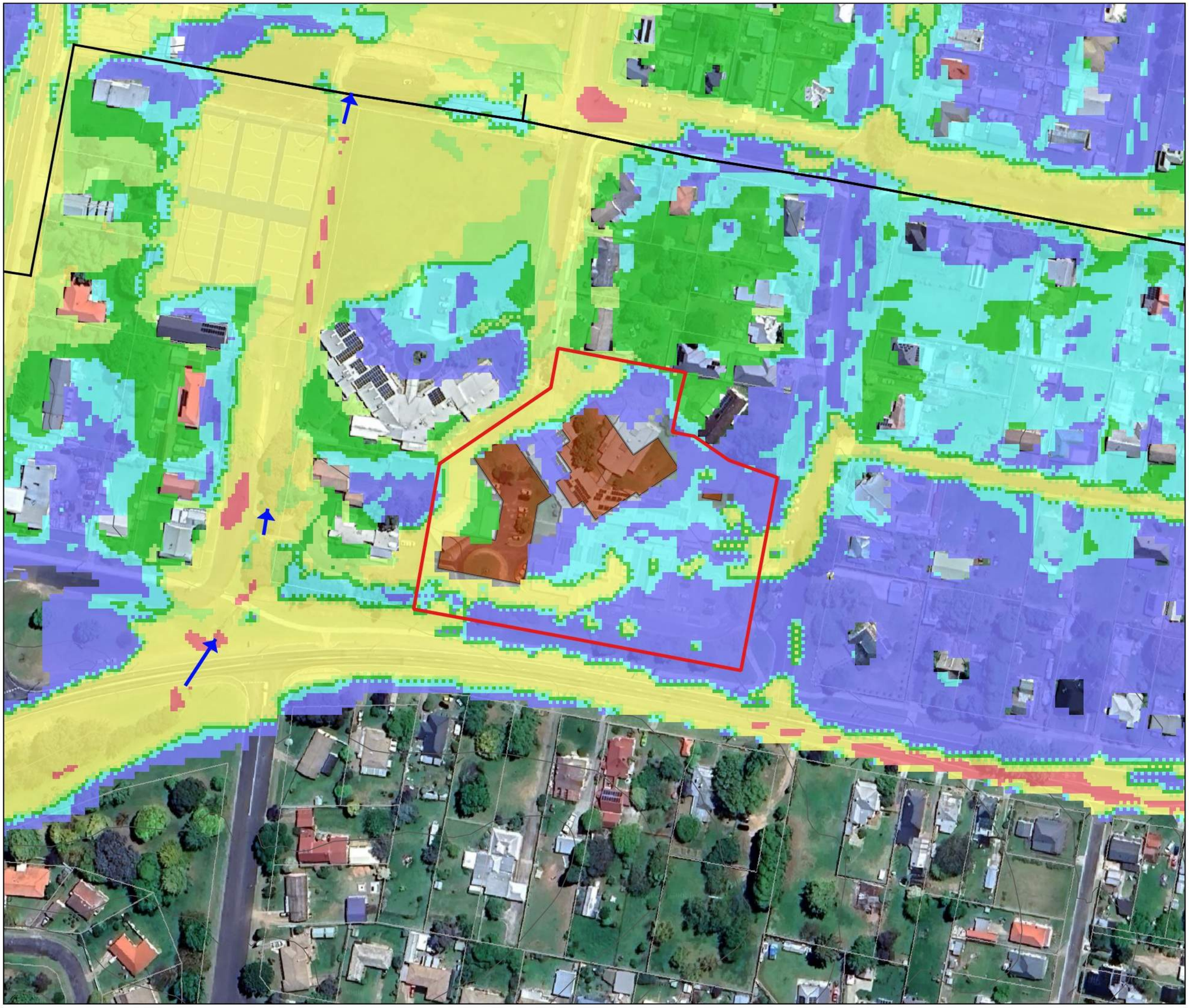
Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Hazard

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

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design PMF Flood Hazard

Job No	Figure No
295289	**Figure 48**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

Disclaimer

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Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Impact (m)

- Was Wet, Now Dry
- < - 0.1
- -0.5 to -0.02
- -0.02 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.03
- 0.02 to 0.04
- 0.04 to 0.05
- 0.05 to 0.075
- 0.075 to 0.1
- 0.1 to 0.25
- 0.25 to 0.5
- > 0.5
- Was Dry, Now Wet

Project Title

Blayney Multipurpose Service

Drawing Title

Unmitigated Design 20% AEP Afflux

Job No	Figure No
295289	**Figure 49**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale: 0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Impact (m)

- Was Wet, Now Dry
- < - 0.1
- -0.5 to -0.02
- -0.02 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.03
- 0.02 to 0.04
- 0.04 to 0.05
- 0.05 to 0.075
- 0.075 to 0.1
- 0.1 to 0.25
- 0.25 to 0.5
- > 0.5
- Was Dry, Now Wet

Project Title

Blayney Multipurpose Service

Drawing Title

Unmitigated Design 5% AEP Afflux

Job No	Figure No
295289	**Figure 50**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

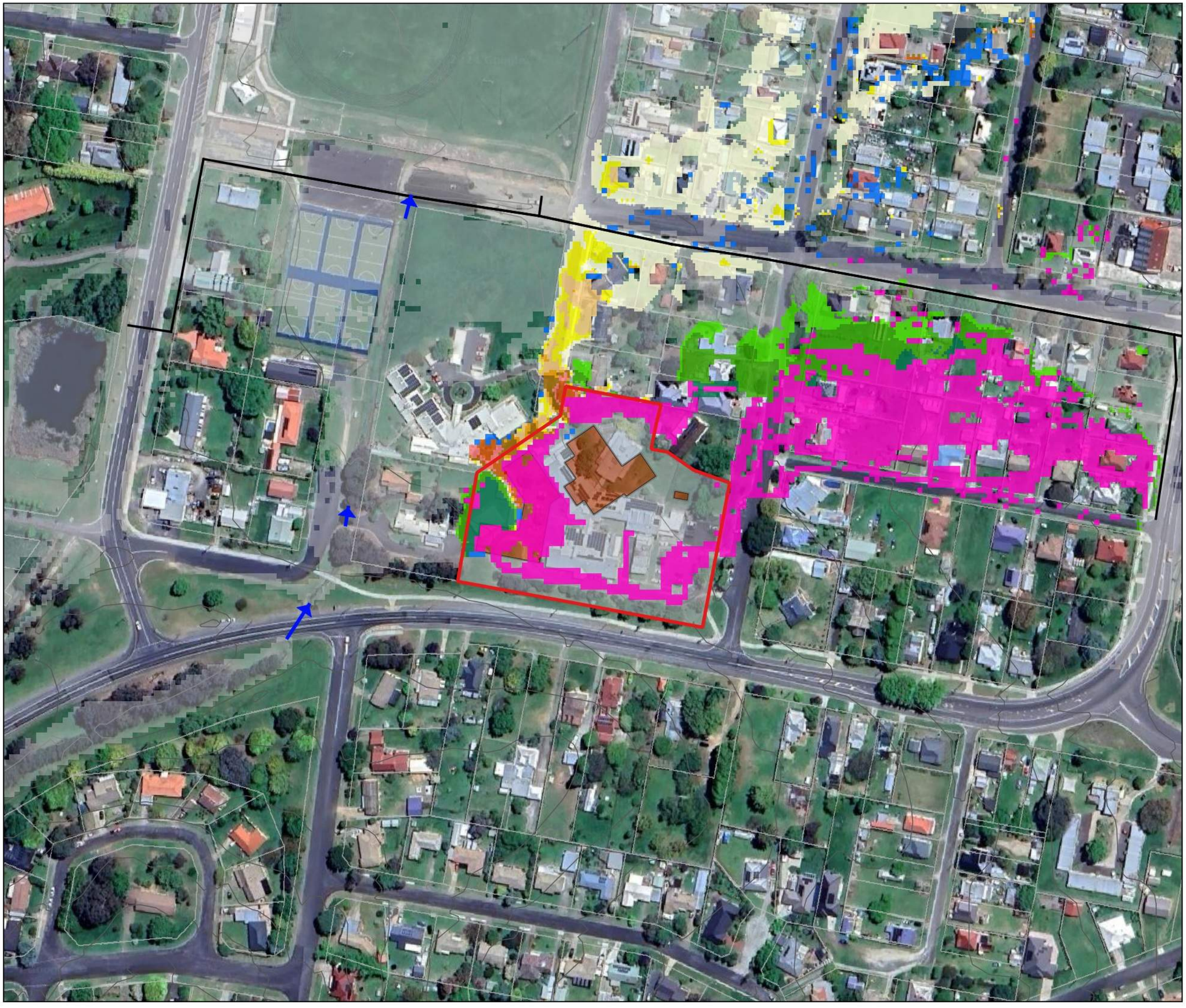
Scale: 0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Impact (m)

- Was Wet, Now Dry
- < - 0.1
- -0.5 to -0.02
- -0.02 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.03
- 0.02 to 0.04
- 0.04 to 0.05
- 0.05 to 0.075
- 0.075 to 0.1
- 0.1 to 0.25
- 0.25 to 0.5
- > 0.5
- Was Dry, Now Wet

Project Title

Blayney Multipurpose Service

Drawing Title

Unmitigated Design 1% AEP Afflux

Job No	Figure No
295289	**Figure 51**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

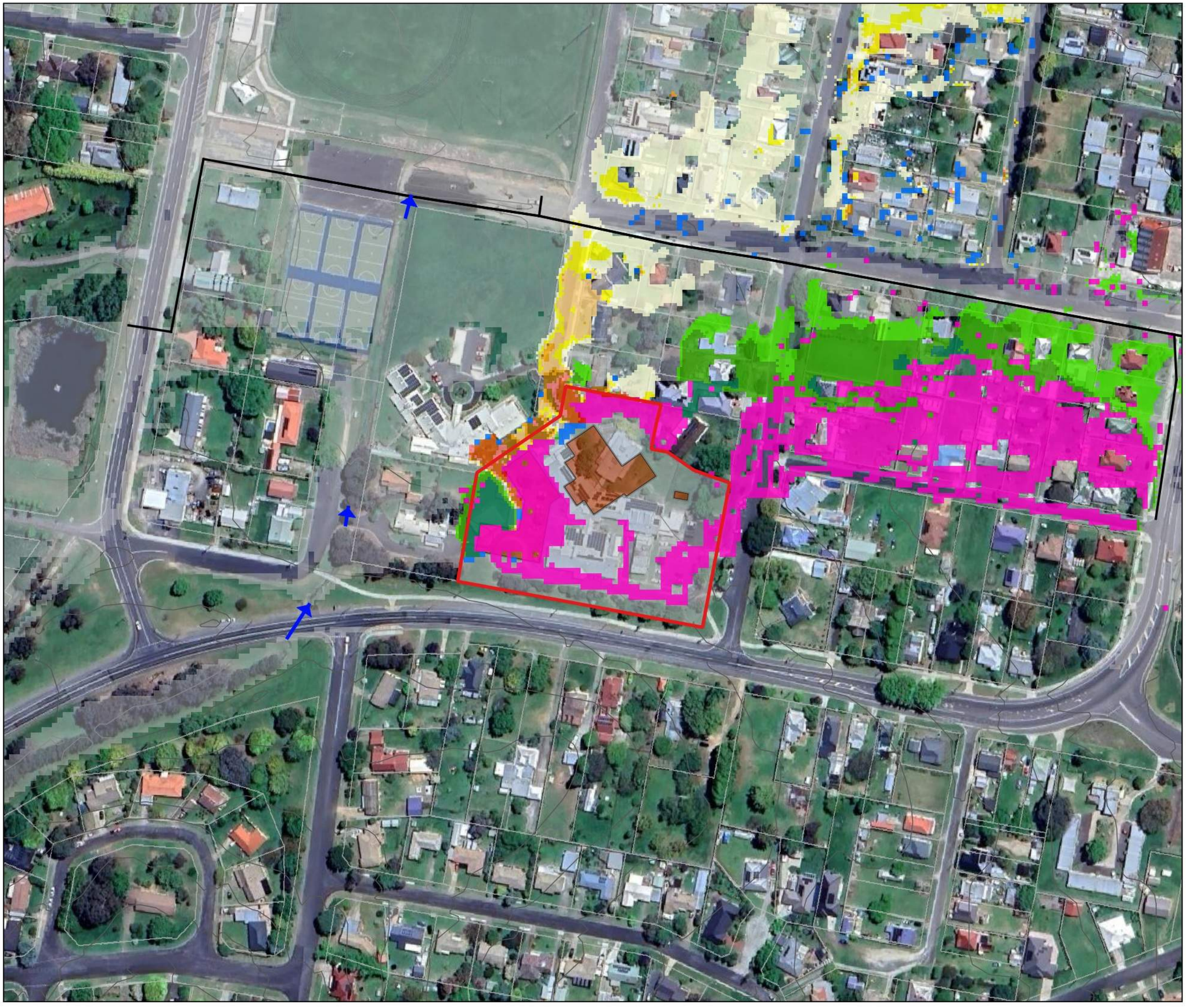
Scale: 0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Impact (m)

- Was Wet, Now Dry
- < - 0.1
- -0.5 to -0.02
- -0.02 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.03
- 0.02 to 0.04
- 0.04 to 0.05
- 0.05 to 0.075
- 0.075 to 0.1
- 0.1 to 0.25
- 0.25 to 0.5
- > 0.5
- Was Dry, Now Wet

Project Title

Blayney Multipurpose Service

Drawing Title

Unmitigated Design 1% AEP + CC Afflux

Job No	Figure No
295289	**Figure 52**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale: 0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Impact (m)

- Was Wet, Now Dry
- < - 0.1
- -0.5 to -0.02
- -0.02 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.03
- 0.02 to 0.04
- 0.04 to 0.05
- 0.05 to 0.075
- 0.075 to 0.1
- 0.1 to 0.25
- 0.25 to 0.5
- > 0.5
- Was Dry, Now Wet

Project Title
Blayney Multipurpose Service

Drawing Title
Unmitigated Design PMF Afflux

Job No	Figure No
295289	**Figure 53**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

Sources: Data.NSW, Google

N

Appendix D

Proposed Conditions Results with mitigation

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Design 20% AEP Depth

Job No	Figure No
295289	**Figure 54**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Design 5% AEP Depth

Job No	Figure No
295289	**Figure 55**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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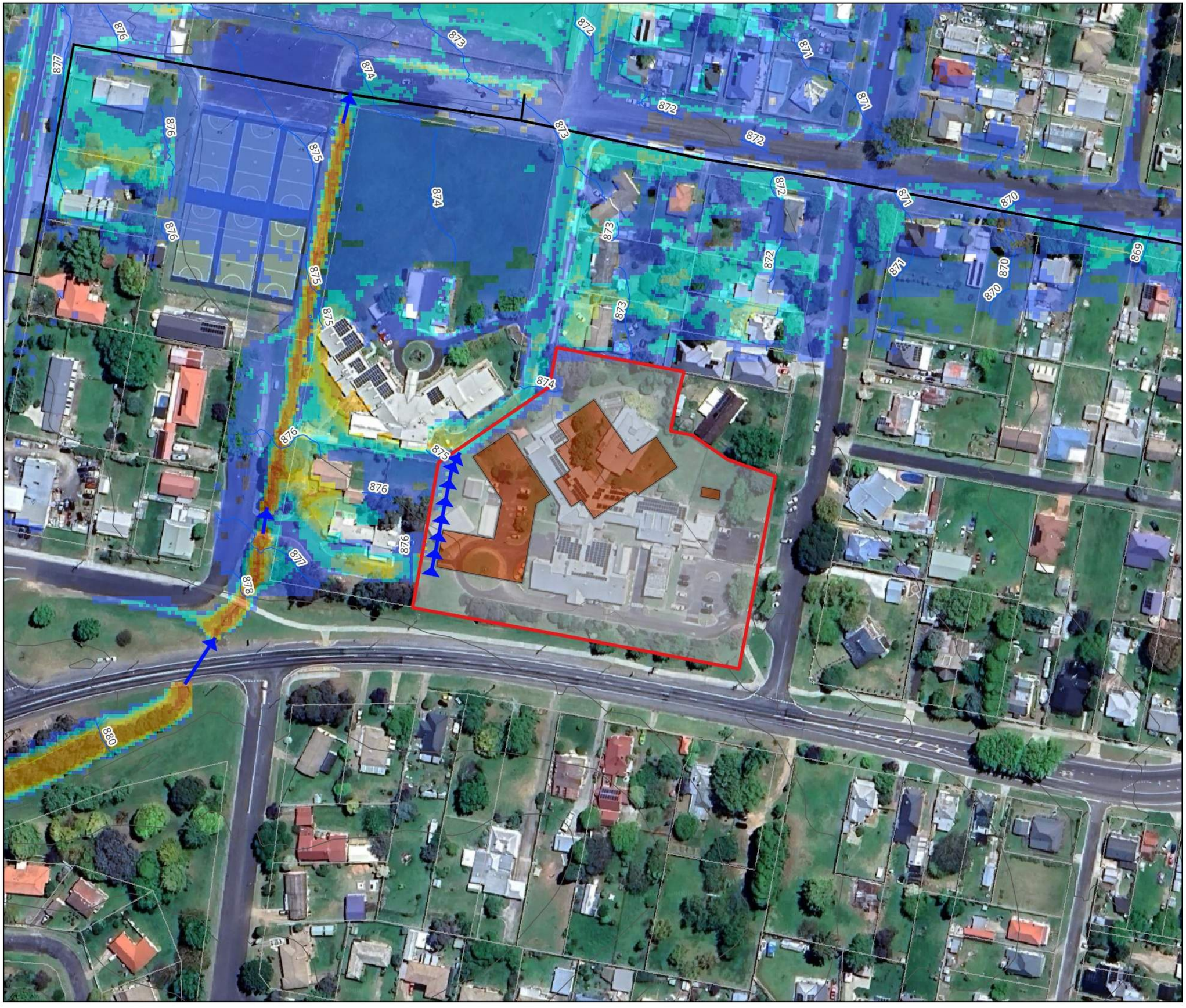
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Design 1% AEP Depth

Job No	Figure No
295289	**Figure 56**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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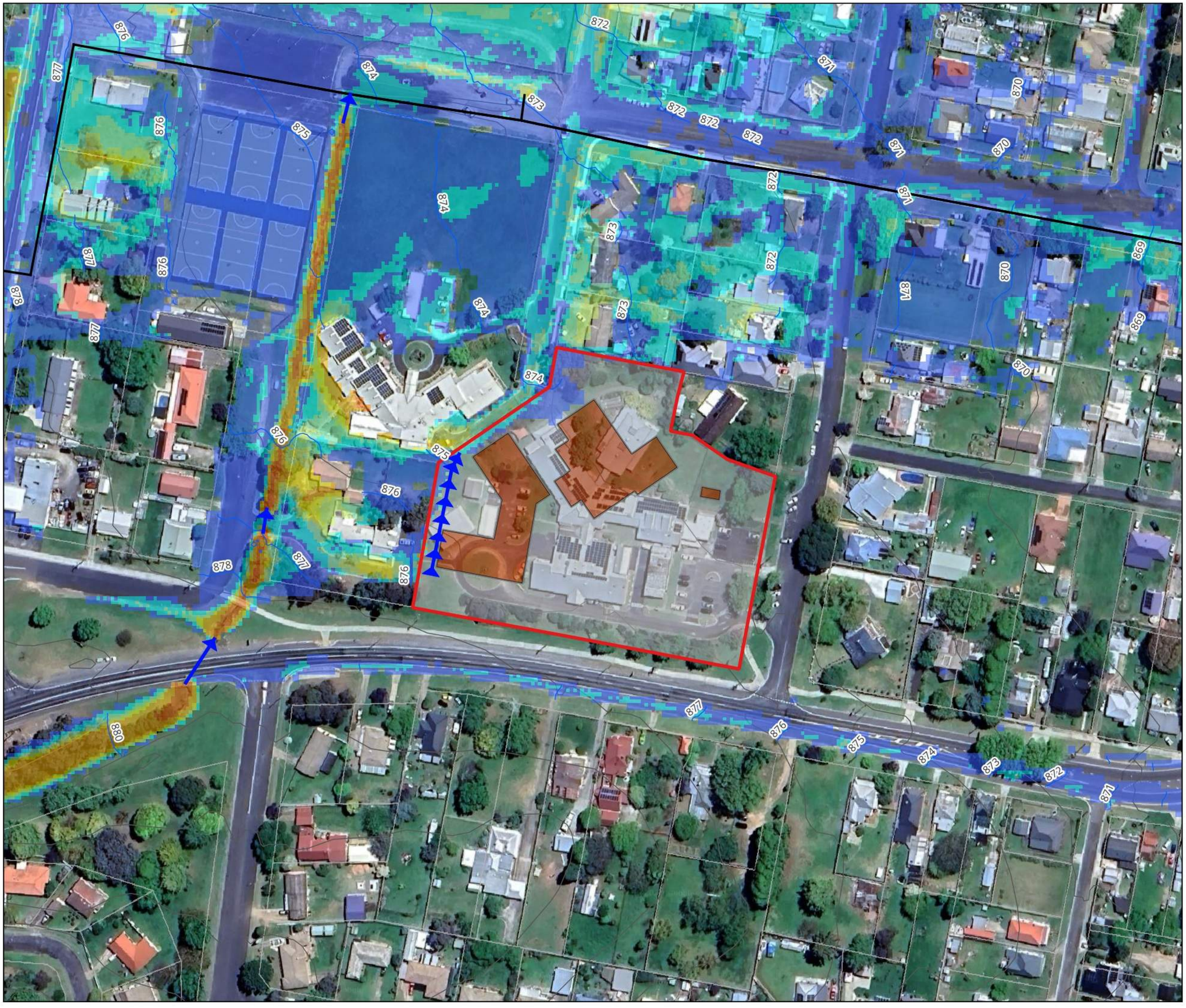
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Design 1% AEP + CC Depth

Job No	Figure No
295289	**Figure 57**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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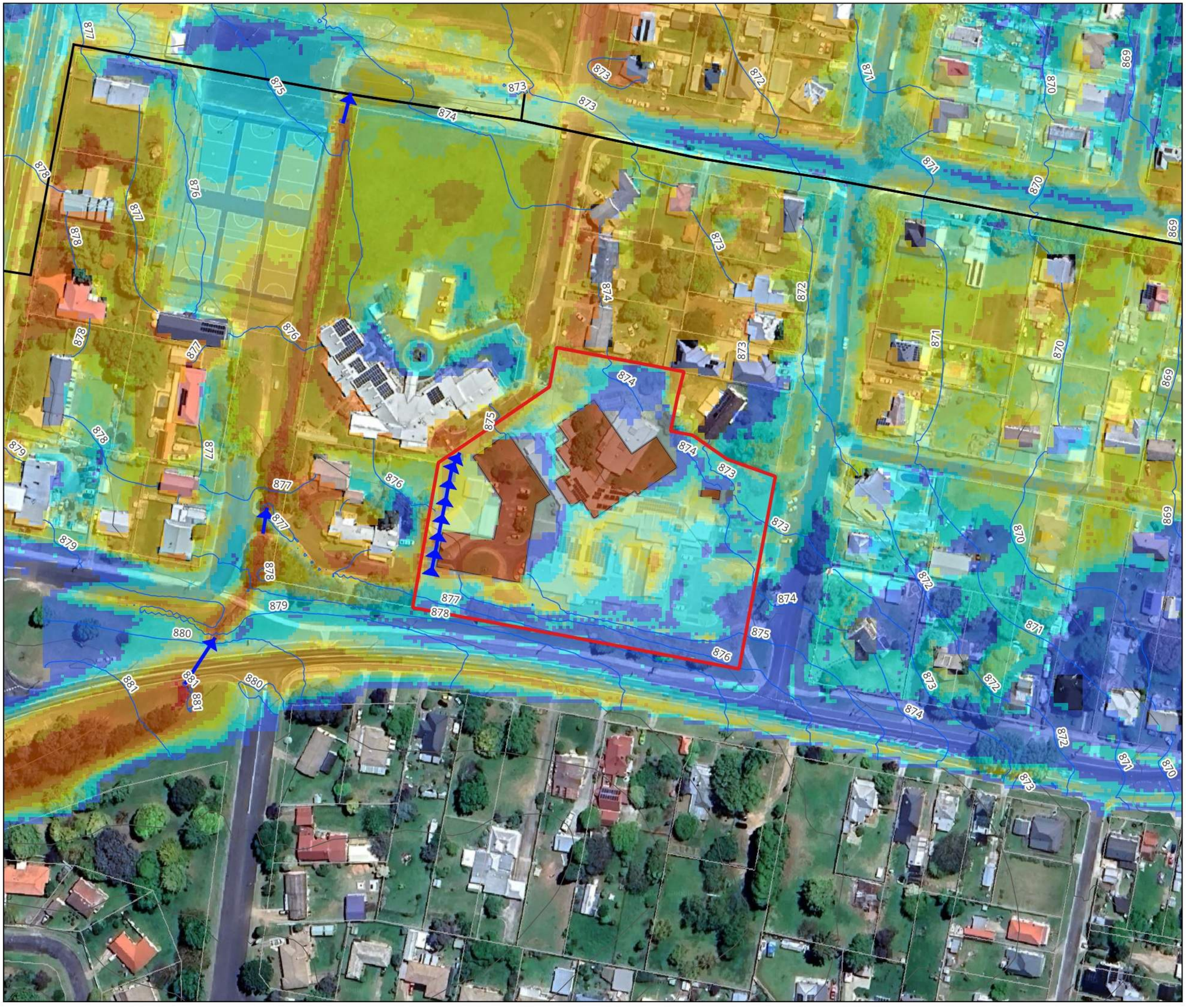
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Design PMF Depth

Job No	Figure No
295289	**Figure 58**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

Disclaimer

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Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Level (m AHD)

890
860

Project Title
Blayney Multipurpose Service

Drawing Title
Design 20% AEP Water Level

Job No	Figure No
295289	**Figure 59**

Coordinate System	Drawing Status
GDA2020 MGA Zone 55	**Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Level (m AHD)

890
860

Project Title
Blayney Multipurpose Service

Drawing Title
Design 5% AEP Water Level

Job No	Figure No
295289	**Figure 60**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Level (m AHD)

890
860

Project Title
Blayney Multipurpose Service

Drawing Title
Design 1% AEP Water Level

Job No	Figure No
295289	**Figure 61**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Level (m AHD)

890
860

Project Title
Blayney Multipurpose Service

Drawing Title
Design 1% AEP + CC Water Level

Job No	Figure No
295289	**Figure 62**
Coordinate System **GDA2020 MGA Zone 55**	Drawing Status **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

Disclaimer

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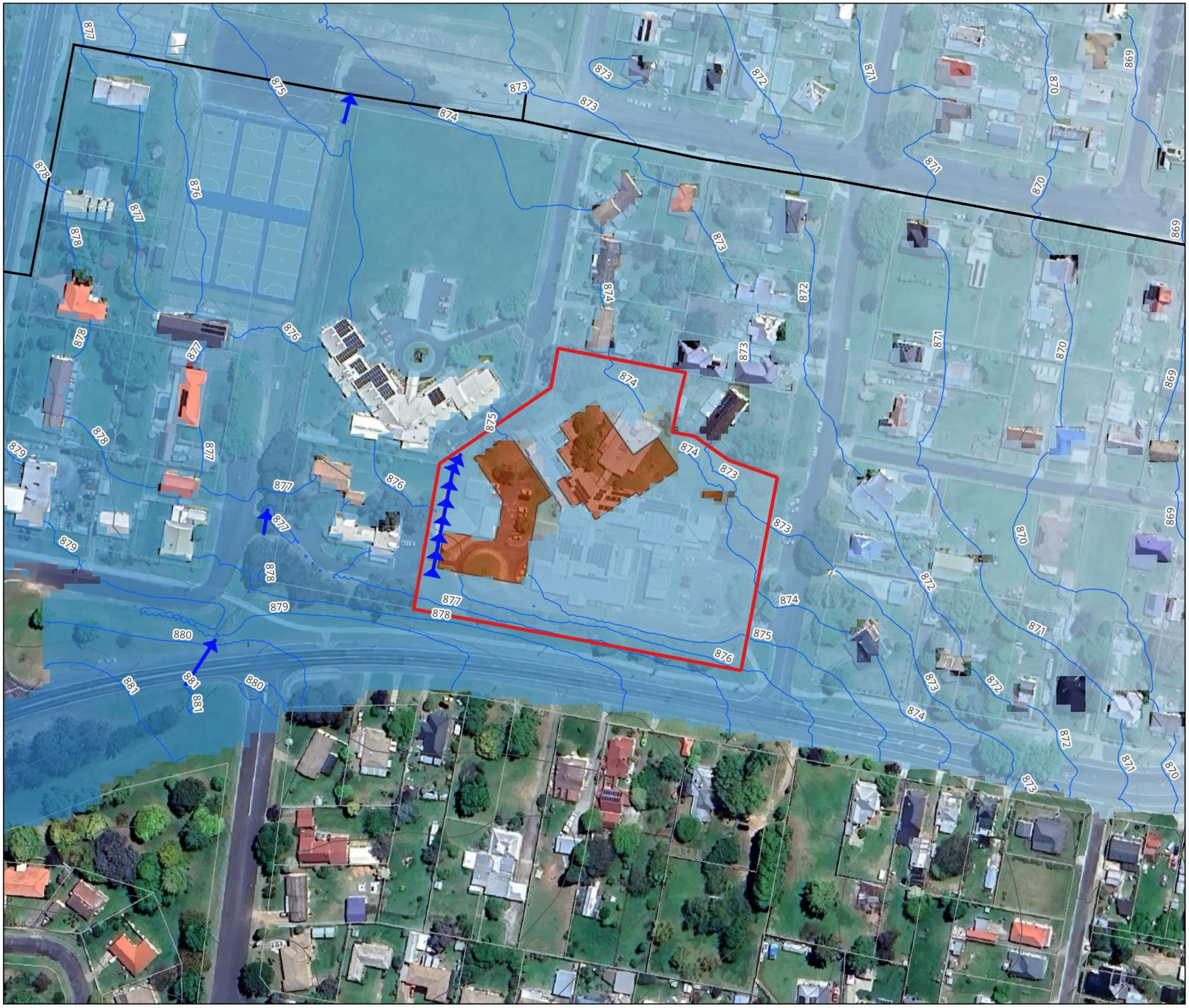
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Level (m AHD)

890
860

Project Title
Blayney Multipurpose Service

Drawing Title
Design PMF Water Level

Job No	Figure No
295289	**Figure 63**
Coordinate System **GDA2020** **MGA Zone 55**	Drawing Status **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

Disclaimer

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Sources: Data.NSW, Google

N

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title

Blayney Multipurpose Service

Drawing Title

Design 20% AEP Velocity

Job No	Figure No
295289	**Figure 64**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client

NSW GOVERNMENT Health Infrastructure

Consultant

ARUP

Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title

Blayney Multipurpose Service

Drawing Title

Design 5% AEP Velocity

Job No	Figure No
295289	**Figure 65**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client

NSW GOVERNMENT Health Infrastructure

Consultant

ARUP

Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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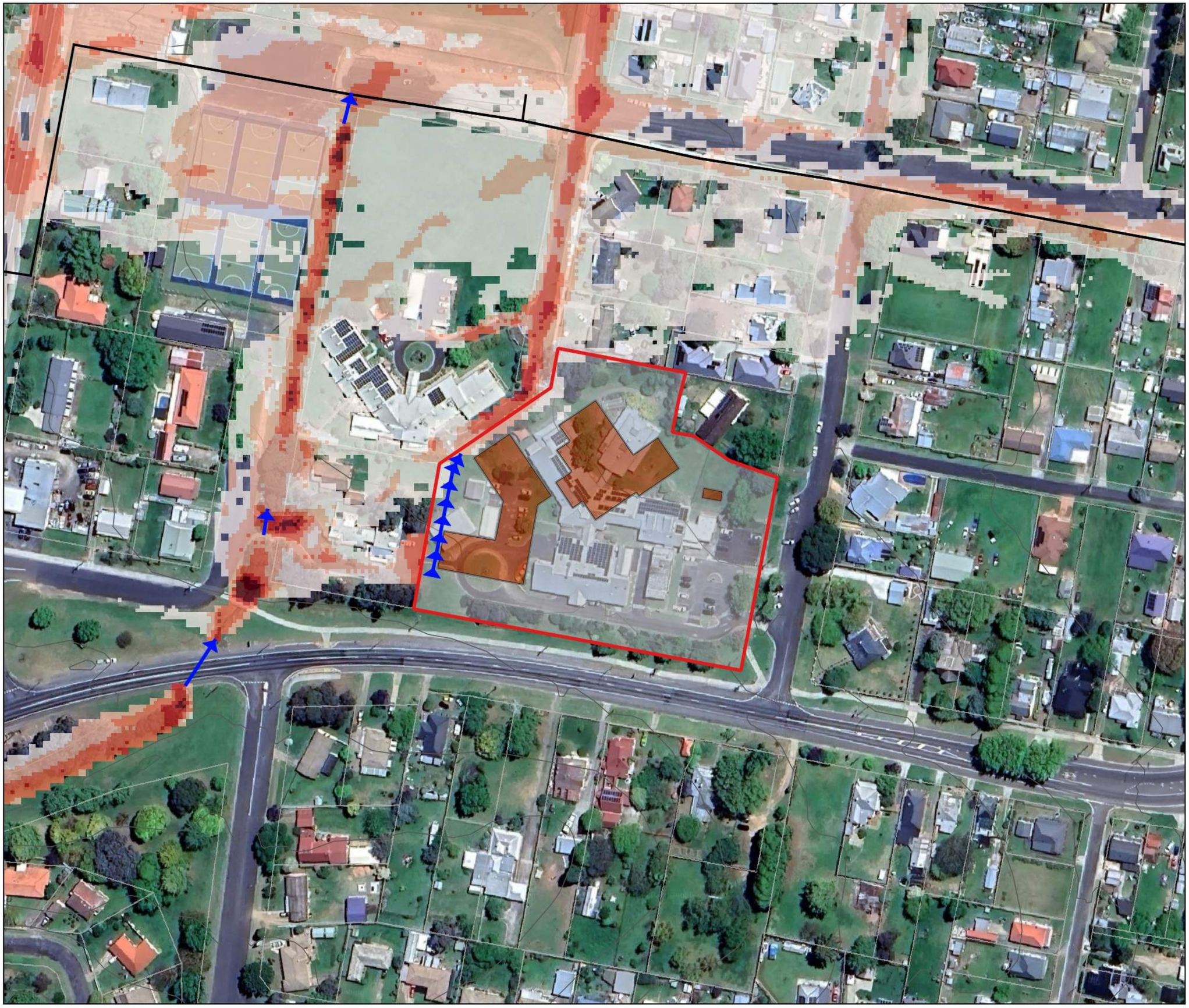
Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title
Blayney Multipurpose Service

Drawing Title
Design 1% AEP Velocity

Job No	Figure No
295289	**Figure 66**
Coordinate System **GDA2020** **MGA Zone 55**	Drawing Status **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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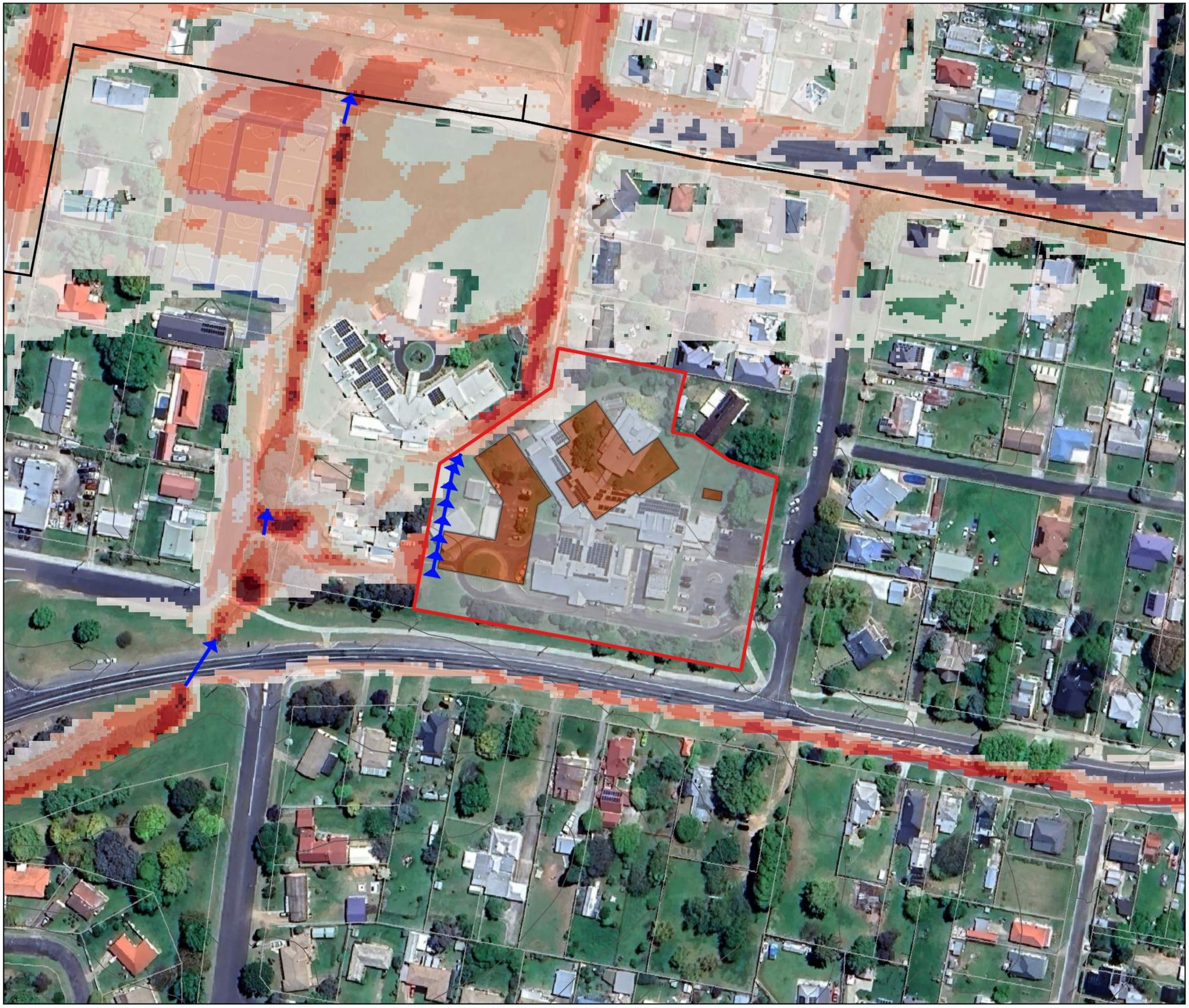
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title
Blayney Multipurpose Service

Drawing Title
Design 1% AEP + CC Velocity

Job No	Figure No
295289	**Figure 67**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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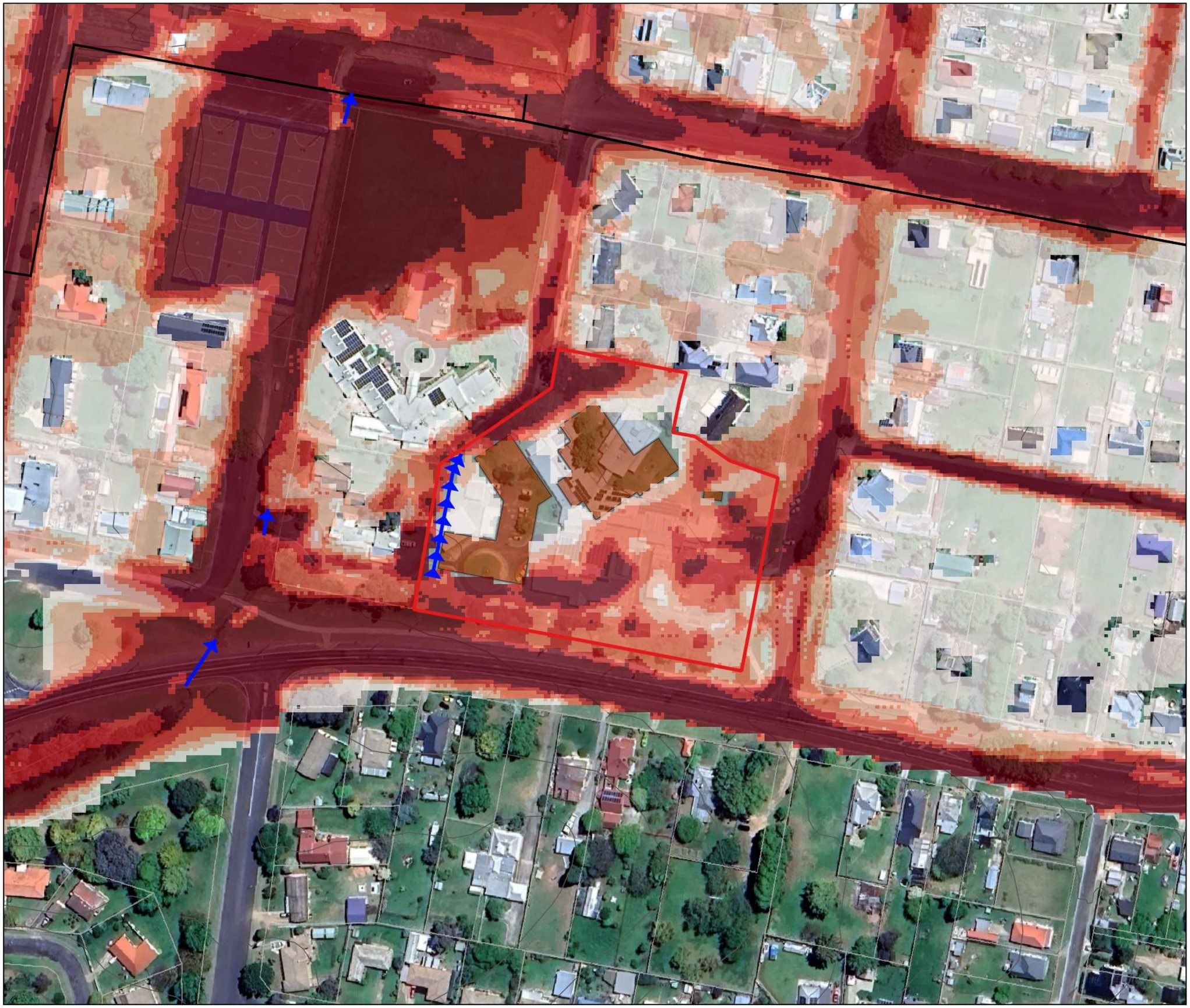
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Velocity (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Project Title
Blayney Multipurpose Service

Drawing Title
Design PMF Velocity

Job No	Figure No
295289	**Figure 68**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

Disclaimer

N

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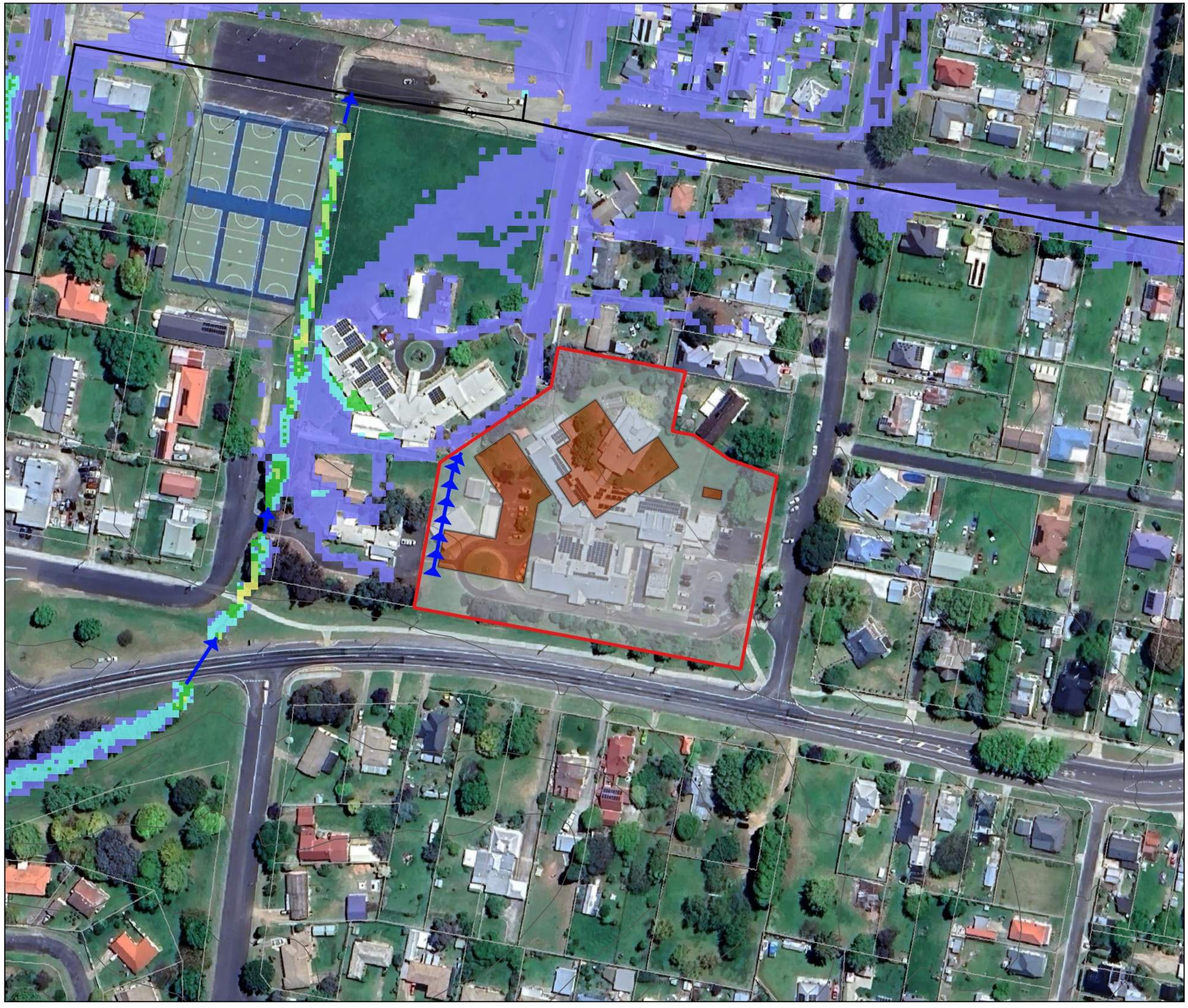
Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Hazard

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

Project Title
Blayney Multipurpose Service

Drawing Title
Design 20% AEP Flood Hazard

Job No	Figure No
295289	**Figure 69**

Coordinate System	Drawing Status
GDA2020 MGA Zone 55	**Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Hazard

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

Project Title
Blayney Multipurpose Service

Drawing Title
Design 5% AEP Flood Hazard

Job No	Figure No
295289	**Figure 70**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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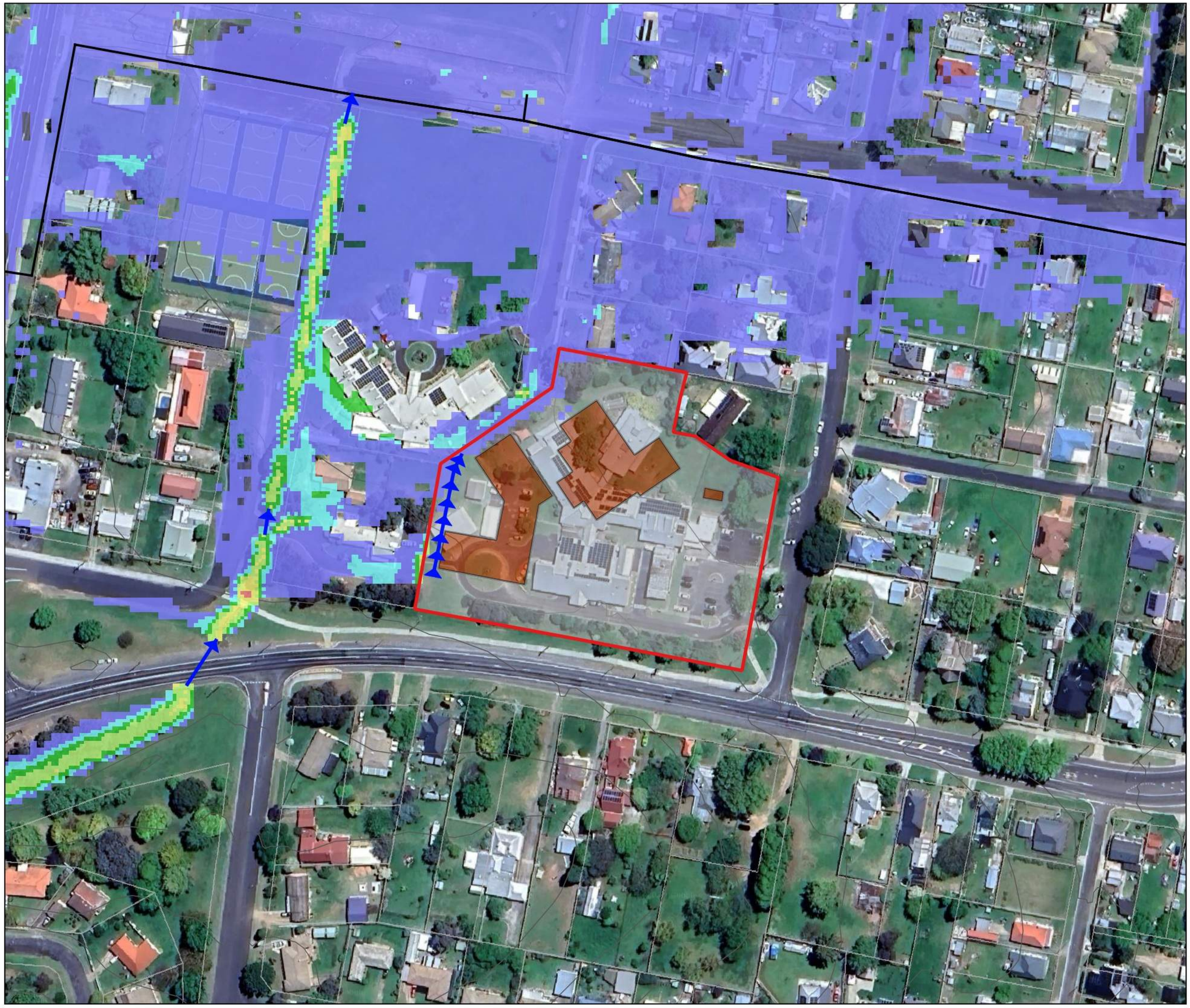
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Hazard

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

Project Title
Blayney Multipurpose Service

Drawing Title
Design 1% AEP Flood Hazard

Job No	Figure No
295289	**Figure 71**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT
Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

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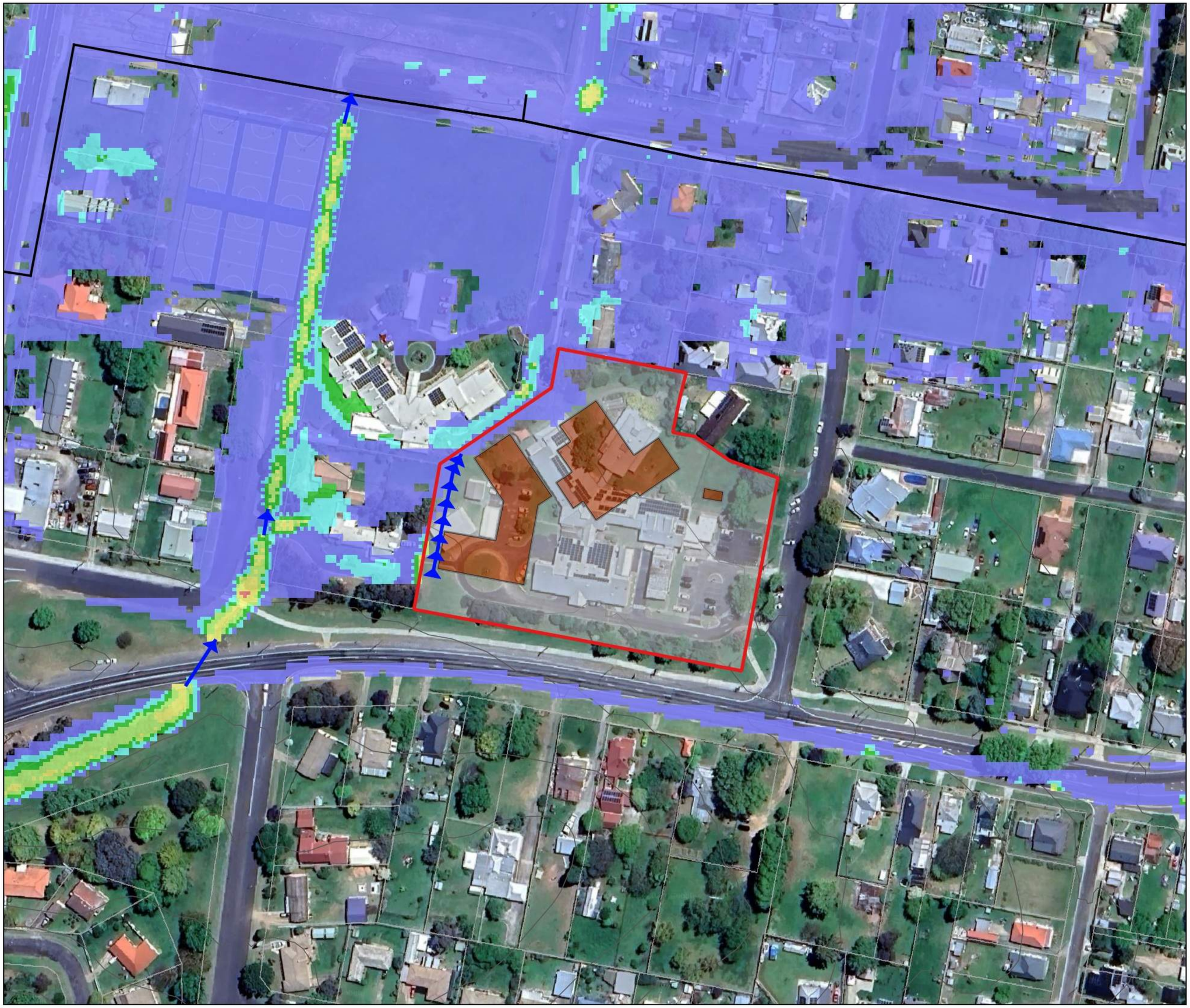
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Hazard

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

Project Title
Blayney Multipurpose Service

Drawing Title
Design 1% AEP + CC Flood Hazard

Job No	Figure No
295289	**Figure 72**
Coordinate System **GDA2020 MGA Zone 55**	Drawing Status **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

Disclaimer

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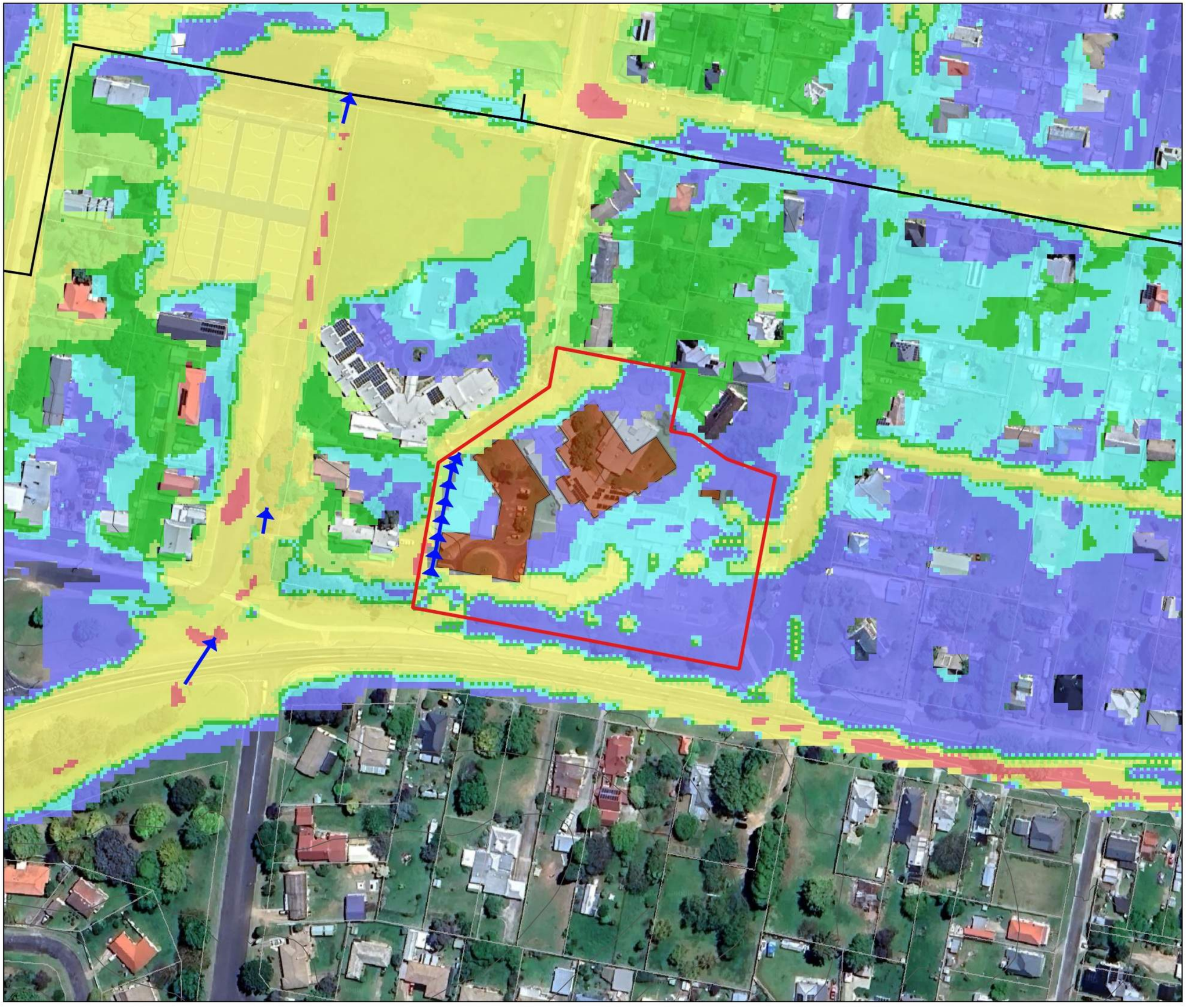
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Hazard

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

Project Title

Blayney Multipurpose Service

Drawing Title

Design PMF Flood Hazard

Job No	Figure No
295289	**Figure 73**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client

NSW GOVERNMENT
Health Infrastructure

Consultant

ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

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Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Impact (m)

- Was Wet, Now Dry
- < - 0.1
- -0.5 to -0.02
- -0.02 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.03
- 0.02 to 0.04
- 0.04 to 0.05
- 0.05 to 0.075
- 0.075 to 0.1
- 0.1 to 0.25
- 0.25 to 0.5
- > 0.5
- Was Dry, Now Wet

Project Title

Blayney Multipurpose Service

Drawing Title

Design 20% AEP Afflux

Job No	Figure No
295289	**Figure 74**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Impact (m)

- Was Wet, Now Dry
- < - 0.1
- -0.5 to -0.02
- -0.02 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.03
- 0.02 to 0.04
- 0.04 to 0.05
- 0.05 to 0.075
- 0.075 to 0.1
- 0.1 to 0.25
- 0.25 to 0.5
- > 0.5
- Was Dry, Now Wet

Project Title

Blayney Multipurpose Service

Drawing Title

Design 5% AEP Afflux

Job No	Figure No
295289	**Figure 75**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

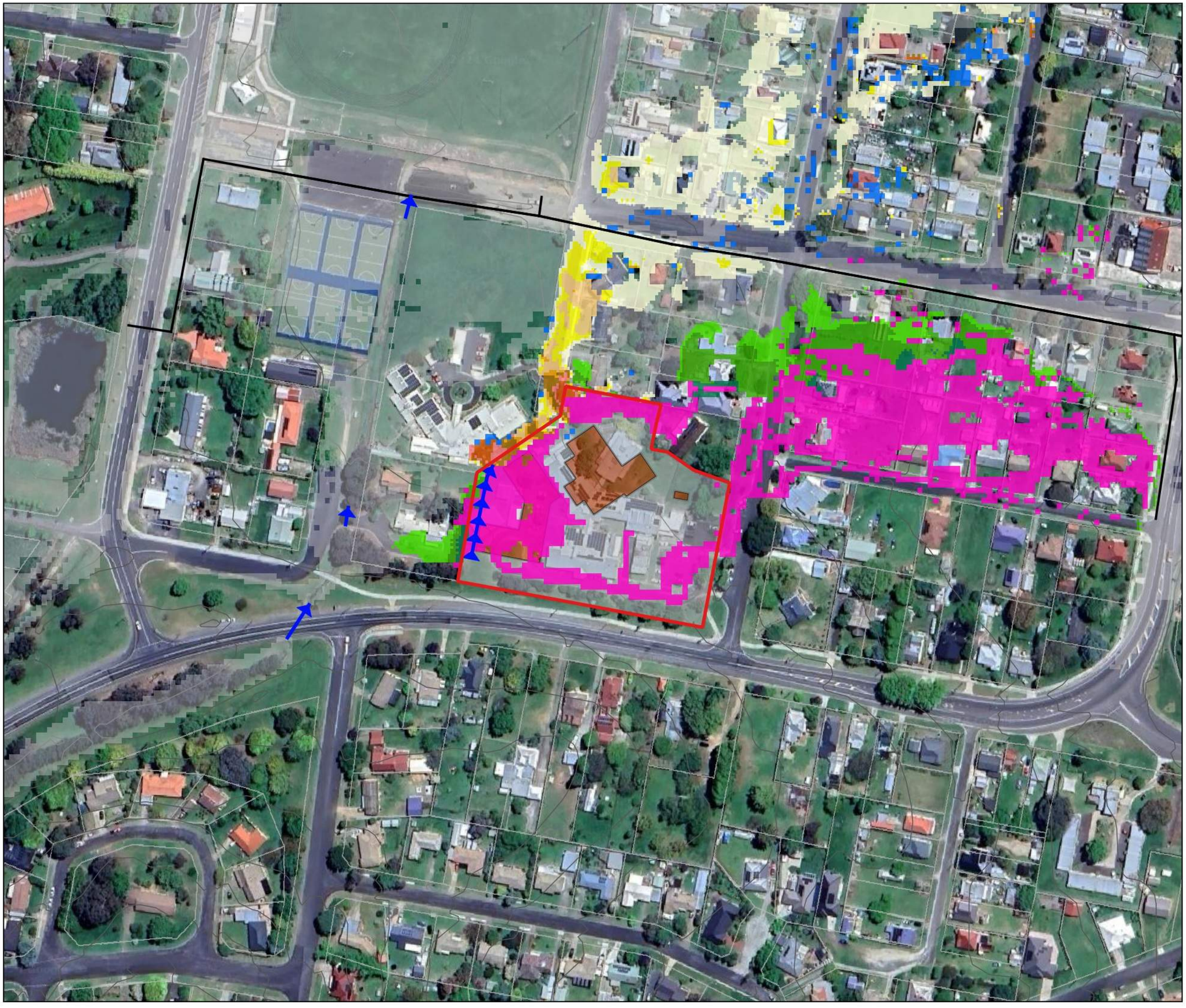
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Impact (m)

- Was Wet, Now Dry
- < - 0.1
- -0.5 to -0.02
- -0.02 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.03
- 0.02 to 0.04
- 0.04 to 0.05
- 0.05 to 0.075
- 0.075 to 0.1
- 0.1 to 0.25
- 0.25 to 0.5
- > 0.5
- Was Dry, Now Wet

Project Title

Blayney Multipurpose Service

Drawing Title

Design 1% AEP Afflux

Job No	Figure No
295289	**Figure 76**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

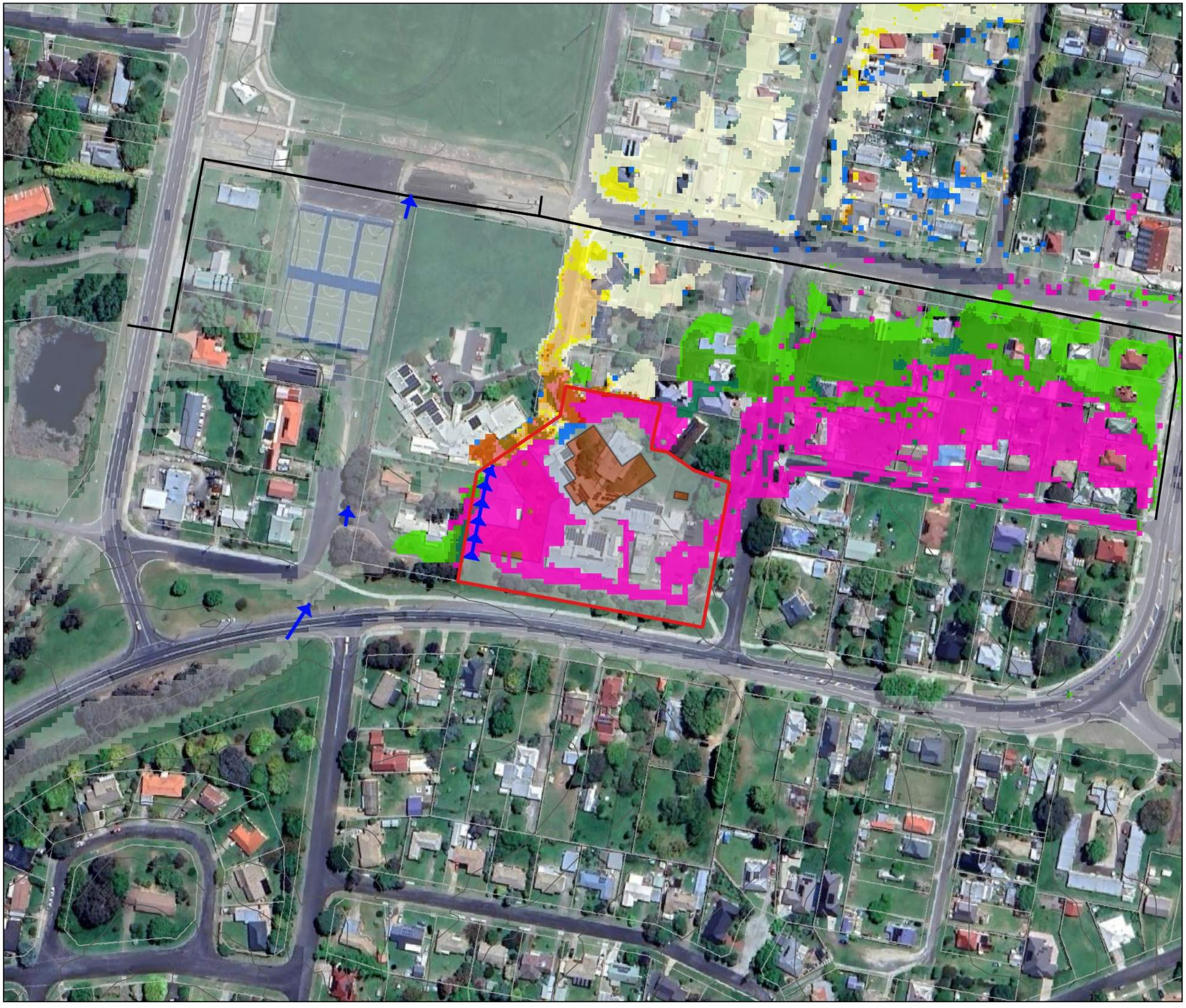
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Impact (m)

- Was Wet, Now Dry
- < - 0.1
- -0.5 to -0.02
- -0.02 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.03
- 0.02 to 0.04
- 0.04 to 0.05
- 0.05 to 0.075
- 0.075 to 0.1
- 0.1 to 0.25
- 0.25 to 0.5
- > 0.5
- Was Dry, Now Wet

Project Title

Blayney Multipurpose Service

Drawing Title

Design 1% AEP + CC Afflux

Job No	Figure No
295289	**Figure 77**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

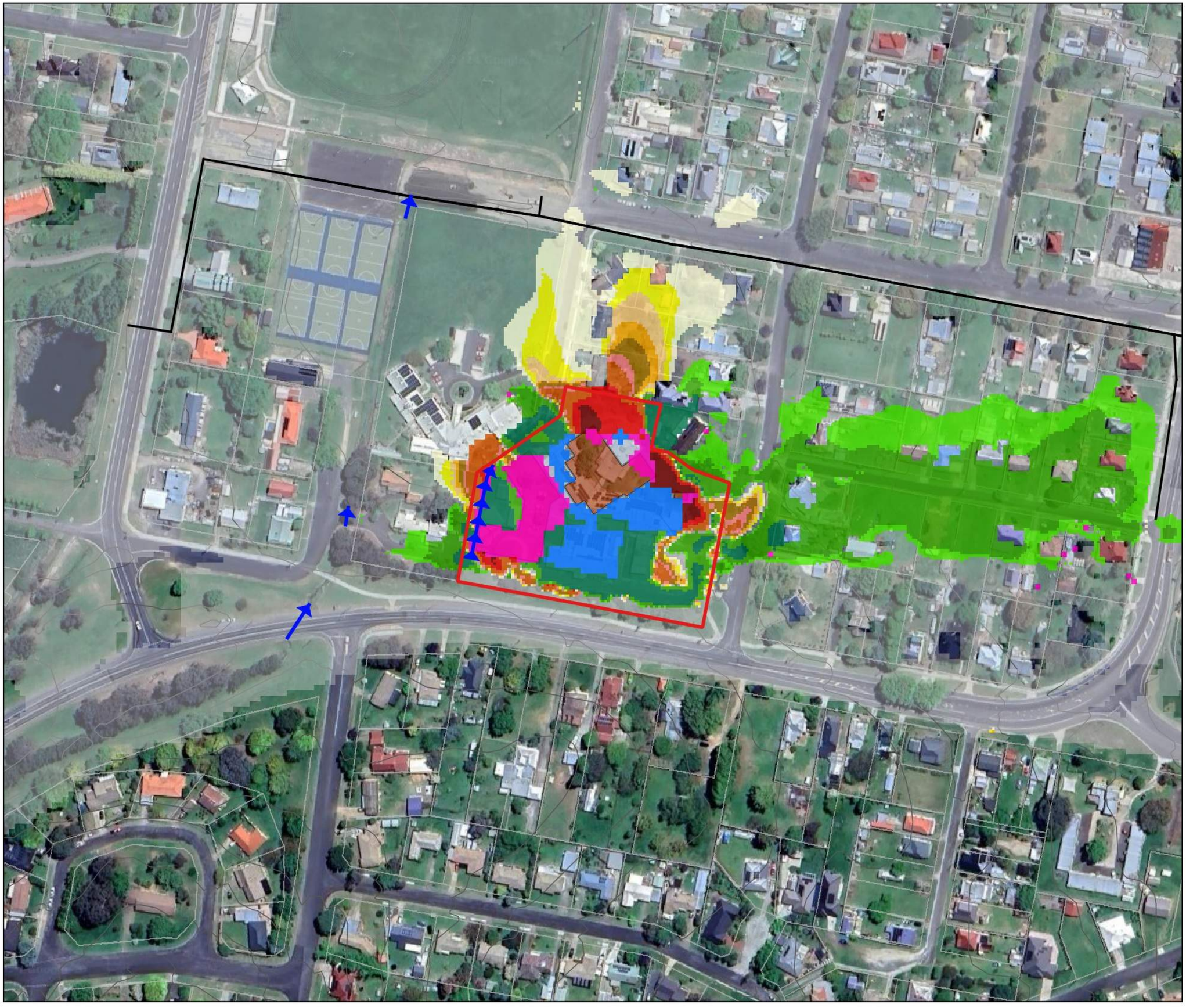
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Impact (m)

- Was Wet, Now Dry
- < - 0.1
- -0.5 to -0.02
- -0.02 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.03
- 0.02 to 0.04
- 0.04 to 0.05
- 0.05 to 0.075
- 0.075 to 0.1
- 0.1 to 0.25
- 0.25 to 0.5
- > 0.5
- Was Dry, Now Wet

Project Title

Blayney Multipurpose Service

Drawing Title

Design PMF Afflux

Job No	Figure No
295289	**Figure 78**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client

NSW GOVERNMENT
Health Infrastructure

Consultant

ARUP
Sky Park, One Melbourne Quarter,
699 Collins Street, Docklands,
VIC 3008, Australia

Disclaimer

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Sources: Data.NSW, Google

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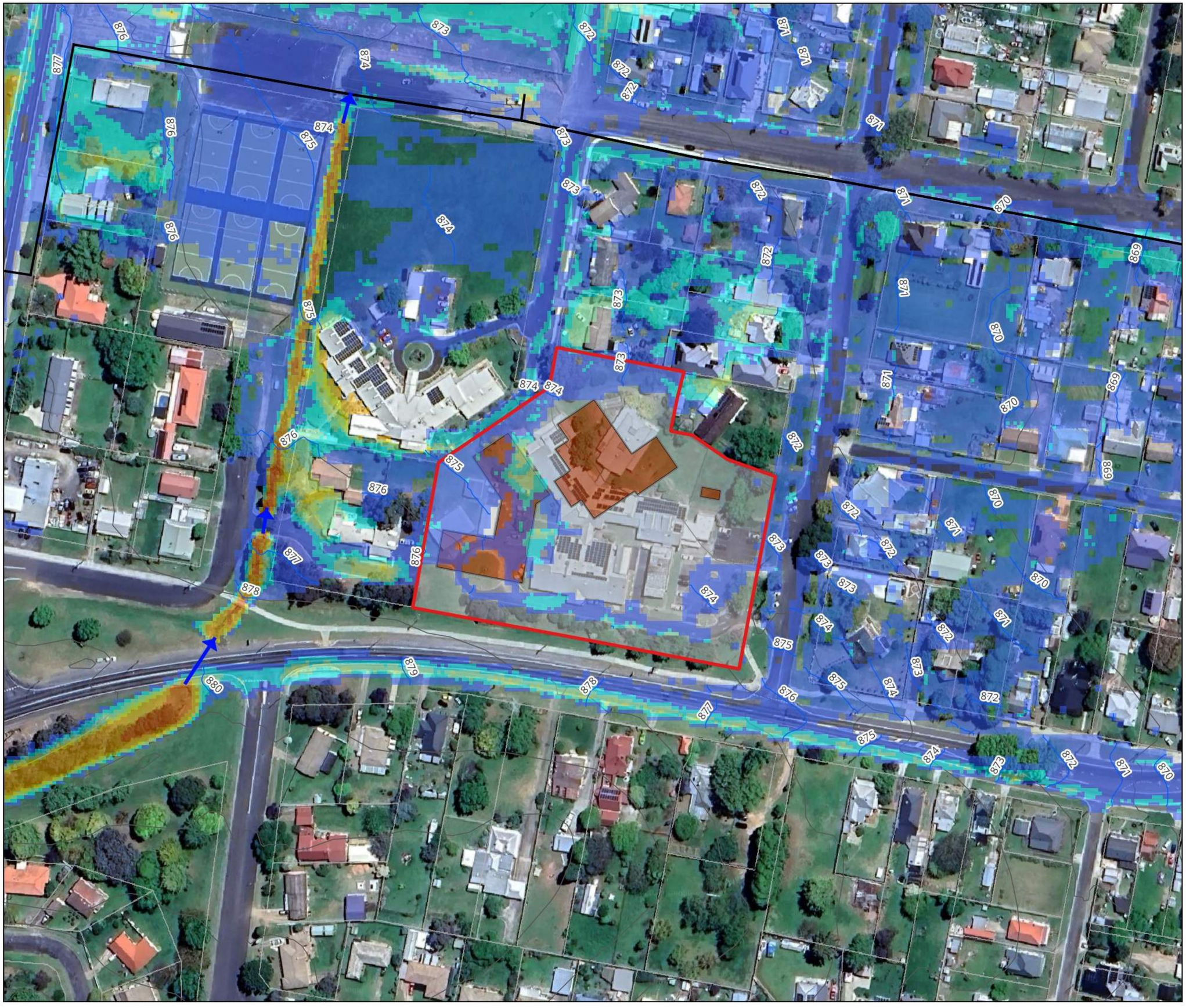
Appendix E

TUFLOW Sensitivity Testing Results



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Existing 1% AEP Depth Blockage Sensitivity

Job No	Figure No
295289	**Figure 79**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

Disclaimer

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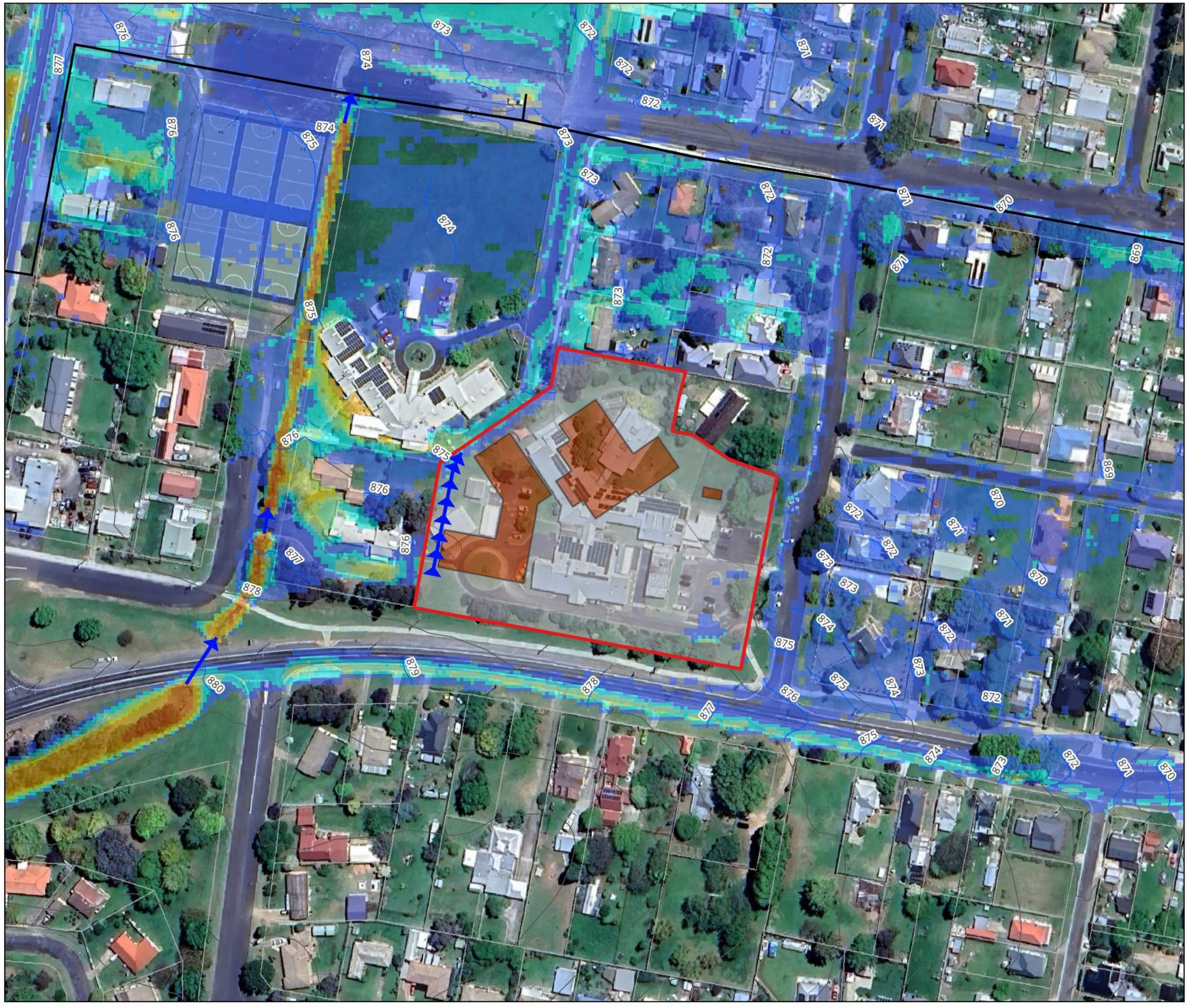
Sources: Data.NSW, Google



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Depth (m)

- <= 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.50
- 0.50 - 1.00
- 1.00 - 2.50
- > 2.50
- Water Level Contour (m AHD)

Project Title
Blayney Multipurpose Service

Drawing Title
Design 1% AEP Depth Blockage Sensitivity

Job No	Figure No
295289	**Figure 80**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale
0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client
NSW GOVERNMENT Health Infrastructure

Consultant
ARUP
Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

Disclaimer

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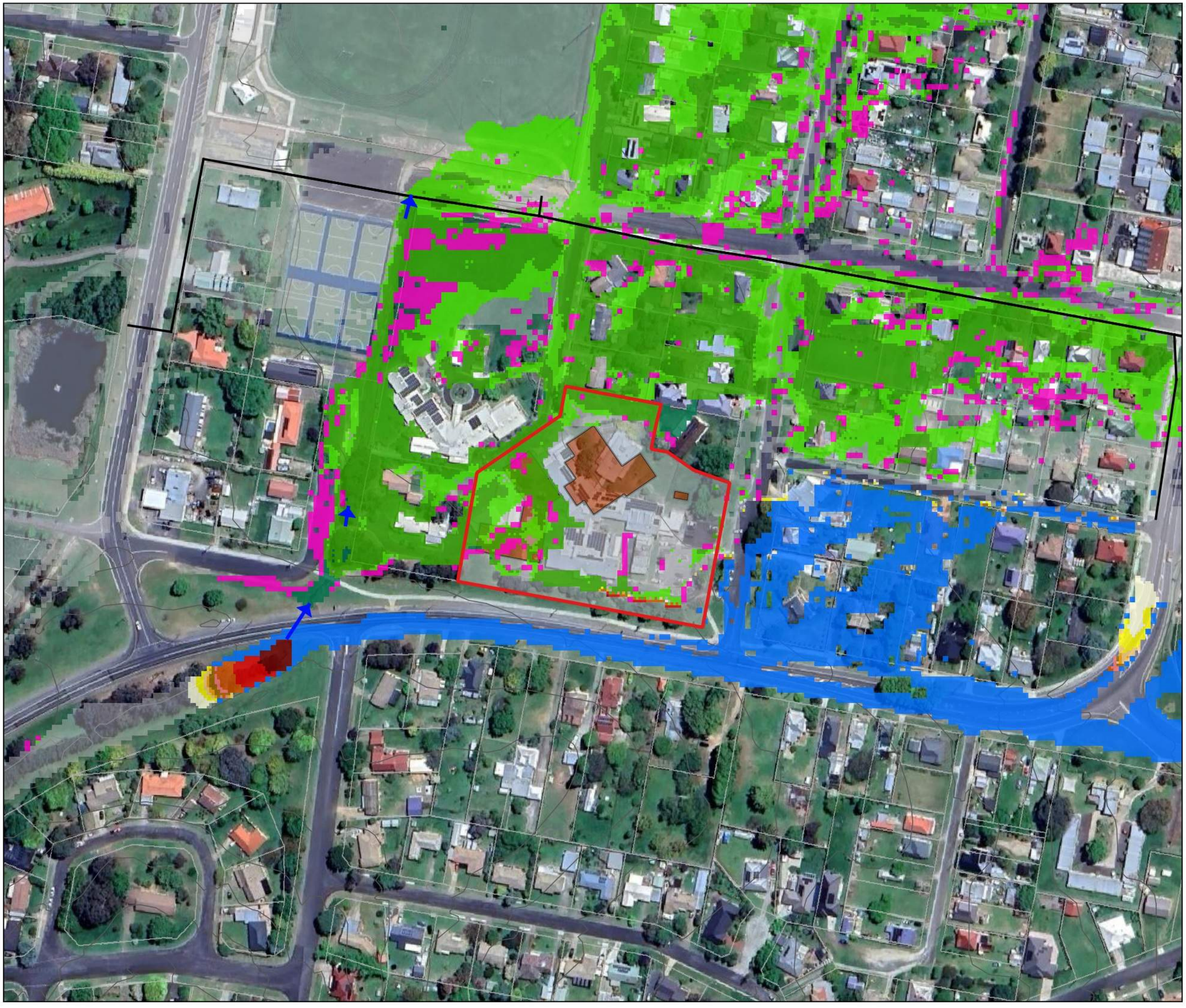
Sources: Data.NSW, Google

N



Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Impact (m)

- Was Wet, Now Dry
- < - 0.1
- -0.5 to -0.02
- -0.02 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.03
- 0.02 to 0.04
- 0.04 to 0.05
- 0.05 to 0.075
- 0.075 to 0.1
- 0.1 to 0.25
- 0.25 to 0.5
- > 0.5
- Was Dry, Now Wet

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 1% AEP Blockage Sensitivity

Job No	Figure No
295289	**Figure 81**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client

NSW GOVERNMENT Health Infrastructure

Consultant

ARUP

Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, VIC 3008, Australia

N

Sources: Data.NSW, Google

Legend

- Project Area
- Model Boundary
- Contours
- 1d_nwk_culverts
- 1d_nwk_pipes

Proposed Works

- Building Footprint
- Civil Works

Impact (m)

- Was Wet, Now Dry
- < - 0.1
- -0.5 to -0.02
- -0.02 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.03
- 0.02 to 0.04
- 0.04 to 0.05
- 0.05 to 0.075
- 0.075 to 0.1
- 0.1 to 0.25
- 0.25 to 0.5
- > 0.5
- Was Dry, Now Wet

Project Title

Blayney Multipurpose Service

Drawing Title

Existing 1% AEP Blockage Sensitivity

Job No	Figure No
295289	**Figure 82**
Coordinate System: **GDA2020 MGA Zone 55**	Drawing Status: **Draft**

Scale

0 25 50 75 m

Issue	Date	By	Chkd	Appd
A	26/09/2024	TH	--	JA

Client: NSW GOVERNMENT Health Infrastructure

Consultant: ARUP

Sources: Data.NSW, Google