Concrete Recyclers Group

Preliminary Flood Assessment: Minto Resource Recovery Facility 7 Montore Road, Minto, NSW

martens consulting engineers

ENVIRONMENTAL

WATER

WASTEWATER

GEOTECHNICAL

CIVIL

PROJECT MANAGEMENT

P1203464JR04V04
August 2021

Limitations Statement

The sole purpose of this report and the associated services performed by Martens & Associates Pty Ltd is to provide a flood assessment at the subject site in accordance with the scope of services set out in the contract / quotation between Martens & Associates Pty Ltd and Concrete Recyclers Group (hereafter known as the Client). That scope of works and services were defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the site.

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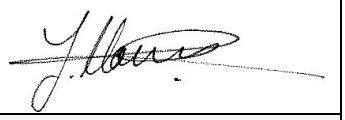
Leo Zhou	Stanley Leung Terry Harvey	Terry Harvey	

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All enquiries regarding this project are to be directed to the Project Manager.

Executive Summary

Martens & Associates Pty Ltd (MA) have prepared this flood assessment to support a State Significant Development Application (SSDA) for a proposed industrial development at 7 Montore Road, Minto, NSW (the site). This report documents the procedures and findings of hydrologic and hydraulic modelling of the site in existing and proposed conditions.

Modelling concluded that:

1. Council's adopted flood characteristics are accurately replicated.
2. Proposed flood characteristics are largely consistent with existing conditions, and differences due to the proposed development are negligible.
3. The proposed fill pad effectively renders the site development area flood free in the 1% AEP flood, except for the site entrance which is inundated by low hazard flood waters.
4. The proposed development would have no material offsite flood impacts.
5. Compliance with Council flood planning level requirements for industrial developments near major drainage lines is achieved.
6. The proposed development is compatible with the existing floodplain environment.

Contents

1 Introduction

1.1 Overview

Martens & Associates Pty Ltd (MA) have prepared this preliminary flood assessment to support a State Significant Development Application (SSDA) for a proposed industrial development at 7 Montore Road, Minto, NSW (the site). Refer to Attachment A for site survey and MA planset P1203464PS02-A400 (not attached to this report) for proposed site layout.

1.2 Project Scope and Objectives

Project scope and objectives are:

1. Prepare a hydrologic model (RAFTS) for the site to determine the peak flow of the 1% annual exceedance probability (AEP) flood.

2. Prepare a hydraulic model (TUFLOW) for the site under existing and proposed conditions and calibrate to available flood data.

3. Prepare relevant flood maps including flood extents, depths, levels, velocities, hazards and impacts.

4. Comment on flood characteristics and model outcomes in existing and proposed conditions.

1.3 Relevant Guidelines

This report has been prepared in accordance with the following guidelines and policies:

1. Commonwealth of Australia (Geoscience Australia) (2019), *Australian Rainfall and Runoff – A Guide to Flood Estimation*.

2. NSW Department of Infrastructure, Planning and Natural Resources (2005), *Floodplain Development Manual*.

3. Campbelltown City Council (2009), *Campbelltown (Sustainable City) Development Control Plan 2009 Volume 2 Engineering Design for Development*

4. Campbelltown City Council (2015), *Campbelltown Local Environmental Plan (LEP)*.

5. Campbelltown City Council (2015), *Campbelltown Development Control Plan (DCP)*.

1.4 Definitions

AEP	Annual exceedance probability: the probability of a flood event occurring within a year. A 1% AEP flood has a 1% chance of occurring in any given year.
ARI	Average recurrence interval: the average time between flood events occurring. A 100 year ARI flood occurs on average once every 100 years.
ARR	Australian Rainfall & Runoff
BOM	Bureau of Meteorology
BBBC	Bow Bowing Bunbury Curran
Council / CCC	Campbelltown City Council
SSDA	State Significant Development Application
IFD	Intensity frequency duration – design rainfall data for frequent and infrequent storm events.
MA	Martens & Associates Pty Ltd

2 Site Description and Background Data

2.1 Location and Site Description

Existing site description summary is provided in Table 1.

Table 1: Existing site description summary.

Address	7 Montore Road, Minto, NSW
Lot / DP	Lot 52 DP 618900
Site Area	Approximately 23,500 m^2
Local Government Area (LGA)	Campbelltown City Council (CCC)
Current Land Use	Industrial material storage
Current Zoning	IN1 – General Industrial
Site Description	The site is primarily grassed in the southern half and gravel in the northern half. There are several portable metal buildings on the site.
Surrounding Land Uses	Drainage channel infrastructure immediately to the west, general industrial everywhere else.
Site Elevation	Approximately 42.4 mAHD at north-eastern site boundary rising to 43.6 mAHD at south-eastern site boundary.
Site Grading & Aspect	Approximately 0.5 - 1.0% for the majority of the site, W aspect. Steep slope of 25 – 30% along the western boundary, WNW aspect.
Site Drainage	Bow Bowing Creek runs from south to north-east immediately to the west of the site. There is an overland flow path immediately outside the northern and southern boundary of the site. The southern flow path contains a 4 m wide drainage easement on 22 - 26 and 27 Pembury Road.

2.2 Catchment Description

We note the following regarding the catchment upstream of the site:

- The site is located within the Bow Bowing Bunbury Curran (BBBC) Creek catchment.
- The site is located on the banks of the Bow Bowing Creek.
- Upstream catchment is primarily urban residential and rural landscape areas, with some industrial areas, and includes the suburbs of Minto, Kentlyn, Leumeah, Ruse, Kentlyn, Airds, Bradbury, Campbelltown, Englorie Park, Ambarvale, Glen Alpine, Menangle Park, Gilead, Mount Annan, Blair Athol, Blairmount, Gregory Hills, Claymore, Woodbine, Eagle Vale, Eschol Park, Kearns, Raby and St Andrews.

- The total catchment area is approximately 4,110 ha and is shown in Attachment C plan PS03-K000.

2.3 Site Flood Mechanisms

The site is likely affected by the following flood mechanisms:

- Overland flows from the local upstream catchment (refer Section 2.22) being conveyed by an existing 9.5 m wide swale along the common boundary of the site and 22 - 26 and 27 Pembury Road running in a westerly direction. The swale contains a 750 mm diameter underground stormwater pipe within a 4 m wide easement on the southern side of the common boundary (within 22 - 26 and 27 Road) draining towards Bow Bowing Creek.

- Overland flows from the local upstream catchment being conveyed by the existing footpath and turning head of Montore Road north of the site. Along the northern boundary of the site, there is a 4 m wide footpath falling in a westerly direction outside of the site. There is a 1500mm diameter underground stormwater pipe running under Montore Road and the footpath and draining towards Bow Bowing Creek. The site is approximately 1 m higher than the footpath levels.

- Flood overbank flows from Bow Bowing Creek. The existing site surface along the western boundary is approximately 4.5 m higher than the invert of the creek.

2.4 Previous Flood Studies

A review of previous flood investigations was undertaken to assess likely local flood behaviour and characteristics for the site and the Bow Bowing Bunbury Curran Creek catchment. Review identified two previous flood studies which would be relevant to this assessment.

2.4.1 Campbelltown City Council (2009) BBBC Creek Flood Study

Council conducted a flood assessment for this catchment and summarised the assessment in the report *Bow Bowing Bunbury Curran Creek Flood Study (2009)*. As part of their study, CCC used RAFTS for hydrologic modelling and TUFLOW for hydraulic modelling.

The flood model for this study was updated in 2011 by Catchment Simulation Solutions (CSS) on behalf of Council. Concurrently, there were a series of coordinated flood studies for each of the twelve sub-catchments of BBBC Creek which were completed between 2010 and 2014 and then refined in 2016 by CSS to create a single water surface across the whole BBCC Creek catchment for each design event. This was

further revised in 2018. Collectively, these flood studies will hereafter be referred to as the CSS flood study.

Council has not provided the CSS flood study report or the TUFLOW model to MA. However, site flood data has been acquired from Council (Attachment B) which is assumed to be based on the CSS flood study. This information includes flood levels on the site. MA have used this model as the basis for undertaking detailed hydraulic modelling at the site.

2.4.2 J.Wyndham Prince (2010) Minto/McBarron Creek Flood Study

J.Wyndham Prince developed a flood model including the suburb of Minto and McBarron Creek. This model was included in the series of coordinated flood studies for the twelve sub catchments of BBBC Creek as mentioned above, and was later revised by CSS in 2018. We were not able to obtain a copy of the flood model or report for this flood study.

2.5 Proposed Development

2.5.1 Overview

Architectural drawings prepared by MA (MA planset P1203464PS02-A400) indicate that the proposed development will include:

- Demolition of existing structures on site.
- Construction of a resource recovery facility.
- Construction of a staff office, lunchroom, carpark, and workshop building.
- One access driveway with weigh bridges and truck wheel washers.

Proposed site earthworks plan is provided in MA planset P1203464PS02-C100 (not attached to this report) and includes internal road and grading design and bulk earthworks across the site to maximise developable area.

3 Hydraulic Modelling

3.1 Overview

The TUFLOW hydraulic model was used to determine flood characteristics including flood extents, levels, depths, velocities and hydraulic hazard for the critical 1% AEP flood event for existing and proposed conditions.

3.2 Hydrology Modelling

3.2.1 Overview

The DRAINS software package (version 2019.03 – 17 May, 2019) was used with the RAFTS hydrological engine to assess the 1% AEP flood peak flow rates for a range of storm durations between 5 minutes and 168 hours.

3.2.2 Hydrology Results

The critical storm duration was determined to be 2 hours for the 1% AEP flood event. The peak flow rate for catchments arriving at the site for the critical duration 1% AEP flood event was determined to be 375 m^3/s.

3.2.3 Validation

The peak flow rate for the catchments was determined by calibrating the MA 1% AEP flood levels on site to the Council 1% AEP flood levels. Comparison between Council flood data and MA peak flood levels for the 1% AEP flood event is given in Table 2. Comparison is made for the peak flood levels at Points A and C as shown in Attachment B.

The comparison shows flood levels as modelled by MA agree well with Council flood levels, and differences are ≤ ± 90 mm. MA modelled flood levels are slightly lower than Council flood levels at Point C, but slightly higher at Point A. This can be attributed to a number of factors due to the differences in the method of modelling the creek, such as the smaller grid cell size MA has adopted, which increases channel capacity and thereby decreases local water levels, or the CSS flood study (which Council flood data is based off) modelling Bow Bowing Creek as a 1D channel in a 2D domain.

We therefore consider the MA model closely matches the Council adopted flood characteristics and is considered adequate for the purposes of detailed site modelling.

Table 2: Comparison between Council flood levels and MA (2019) modelled peak water levels.

	Point C [1]				Point A [1]			
	Peak Flood Level (mAHD)		Difference		Peak Flood Level (mAHD)		Difference	
Flood Event	Council [2]	MA	(m)	(%)	Council [2]	MA	(m)	(%)
1% AEP	43.20	43.12	-0.08	-0.19	42.50	42.59	0.09	+0.20

Notes

1. Calibration locations shown in Attachment B.
2. Peak flood levels from the Council flood data (Attachment B).

3.3 Scenarios

The hydraulic model was setup to represent the following flood condition scenarios:

1. Existing condition: the catchment and site in their current state as described in Sections 2.1, 2.2 and 2.3.

2. Proposed condition: the catchment in its current state and the site in its proposed state as described in Section 2.5.

The hydraulic model was used to assess flooding for the 1% AEP 2 hour (critical duration) event.

In summary, a total of 2 scenarios were modelled as part of this assessment (2 flood condition scenarios and 1 flood event each).

3.4 Terrain Data

Catchment LIDAR data provided by LPI (2011) was merged with site survey data (Attachment A) provided by William L. Backhouse (June 2017) to create a 3D surface for the existing conditions site and the local floodplain environment used in the TUFLOW model.

The proposed conditions surface also included site design grading as shown in MA planset P1203464PS02-C100 (not attached to this report).

3.5 Model Setup

3.5.1 Existing Conditions

TUFLOW model construction for existing conditions consisted of:

1. A 2.0 m topographic grid based on the available survey and LIDAR data.

2. The model domain was defined from Bow Bowing Creek approximately 500 m upstream of the site to Bow Bowing Creek

approximately 250 m downstream of the site. Model boundary extents were generally placed along catchment ridgelines and / or connecting catchment high points surrounding the study area.

3. A direct rainfall boundary condition based on the critical duration 1% AEP hyetographs from DRAINS. The boundary condition comprised the portion of the model domain east of Bow Bowing Creek excluding the site, and enabled automatic flood water routing.

4. Inflow boundary conditions based on the critical duration 1% AEP hydrograph from DRAINS which is calibrated to match the Council flood level.

5. Computed water slopes for downstream model extent boundary conditions based on the slopes from available survey / LIDAR data.

6. Manning's zones based on Nearmaps (2019) aerial photography of the study area, with roughness coefficients adopted as per Table 3.

7. Hydrologic loss coefficients for pervious and impervious catchment materials were consistent with hydrologic modelling (refer Section 3.2) and were adopted as per Table 3.

8. Existing buildings were assigned elevations above the floodplain to model as flow obstructions.

9. A 1D network to model the relevant pit and pipe network in the drainage easement south of the site and the road north of the site:

    a. 1D network pipe sizes, invert levels and locations are based on William L. Backhouse (2012) survey data, LIDAR data and GIS data provided by CCC (October 2019).

    b. Pipe roughness coefficient of 0.013 (concrete) was adopted.

    c. Pit blockages of 20% for on-grade pits and 50% for sag pits have been adopted on existing stormwater pits along Pembury Road and Montore Road based on Council's requirements for pit blockage factors in Table 4.3 of the Campbelltown DCP 2009 Volume 2 Engineering Design for Development.

Table 3: Manning's roughness and hydrologic loss values for TUFLOW modelling.

Catchment Material Type	Manning's Roughness Coefficient [1]	Initial Loss (mm) [1 / 2]	Continuing Loss (mm/hr) [1 / 2]
Open Space	0.030	20	2.3
Grass	0.030	20	2.3
Roads / Concrete	0.015	1.5	0.0
Buildings	0.015	1.5	0.0

Notes
1. Based on typical values from similar catchments.
2. Hydrologic losses were consistent with RAFTS modelling as detailed at Section 3.2.

3.5.2 Proposed Conditions

The existing conditions model was modified as follows to simulate proposed conditions:

1. A 2.0 m topographic grid based on the available survey, LIDAR data and proposed site grading. Proposed southern retaining wall has a 2 m offset from the site boundary to allow conveyance of floodwaters from the southern catchment to Bow Bowing Creek via the existing swale.

2. Site manning's zones were updated to represent design surfaces.

3. Site buildings were removed and replaced with proposed buildings to model as flow obstructions.

All other model construction elements remained consistent with the existing conditions model.

3.6 Results

3.6.1 Flood Results

Flood mapping results (flood levels, depths, velocities and provisional hazard categories) for the critical duration 1% AEP flood event in existing and proposed conditions are provided in Attachment C, with drawing references summarised in Table 4.

Table 4: Flood map drawing references in Attachment C (MA planset P1203464PS03). [1]

Flood Condition Scenario	Critical Duration Flood Event	Water Level & Depth	Water Velocity	Provisional Hydraulic Hazard Categories [2]	Water Level Impact
Existing Conditions	1% AEP	K100	K101	K102	–
Proposed Conditions	1% AEP	K200	K201	K202	K300

Notes

1. Flood results have been filtered to show areas of greater than 50 mm depth.
2. Provisional hydraulic hazard categories are based on NSW Floodplain Development Manual (2005) definitions and are shown in Figure 1.

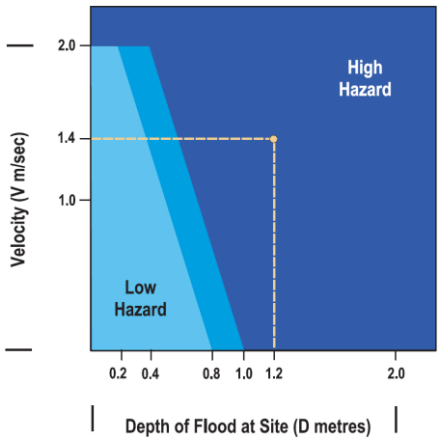

Figure 1: Provisional hydraulic hazard categories (*NSW Floodplain Development Manual*, 2005).

Comparisons between Council peak flood levels and MA peak flood levels have already been described in Section 3.2.3 and were found to be closely matching, and thus adequate for the purposes of detailed site modelling.

3.7 Discussion

We note the following regarding modelled flood behaviour:

3.7.1 Existing Conditions

1. The majority of the site is elevated above the 1% AEP flood level and thus is flood free. A small portion of areas along the western boundary of the site which slopes down to Bow Bowing Creek is affected by flood waters from the creek.

2. Along the southern boundary, the site slopes down to the drainage easement on 22 - 26 and 27 Pembury Road. The easement is affected by flood waters from the creek as well as local overland flow with depths of up to 800 mm.

3. Along the northern boundary of the site, the site slopes down to the footpath connecting Bow Bowing Creek and Montore Road. The 1% AEP flood water is contained on the footpath and turning head of Montore Road outside of the site with depths of up to 900 mm. The site entrance is inundated by flood waters of up to 500 mm.

4. The 1% AEP flood levels range from 43.12 mAHD to 42.59 mAHD from the south-western corner of the site to the north-western corner of the site. Refer to Section 3.2.3 for details of the calibration and discrepancy between the modelled flood levels and the Council provided flood levels.

5. Flood velocities on-site are generally low, below 1.0 m/s in the 1% AEP event, but up to 3.8 m/s in Bow Bowing Creek.

6. Hydraulic hazards on-site in the 1% AEP flood event are all low, with the exception of an approximately 20 m^2 area on the western end of the site due to a 1.5 m drop in the grid elevation at that location. Hydraulic hazard is high in Bow Bowing Creek.

3.7.2 Proposed Conditions

1. Proposed flood characteristics are largely consistent with existing conditions, and differences due to the proposed development are negligible.

2. The western and southern portion of the site has been elevated which renders the site completely flood free from Bow Bowing Creek in the 1% AEP event. Refer to the site earthworks plan provided in MA planset P1203464PS02-C100 (not attached to this report) for more earthworks details.

3. There is some flood affectation on the northern end of the driveway ramp due to flood water ponding up in the turning head on Montore Road. The flood water reaches depths of up to 500 mm which is largely unchanged from the existing condition.

4. The 1% AEP hydraulic hazard at the entrance is low hazard.

5. CCC requires a minimum freeboard of 500 mm above the predicted 1% AEP flood level for industrial areas in relation to any creek or major stormwater line. The 1% AEP flood level is 43.12 mAHD at the south-western boundary and 42.60 mAHD at the north-western boundary. The proposed earthworks raises the site to be 1.0 to 1.5 m above the 1% AEP flood level in Bow Bowing Creek, and therefore complies with CCC freeboard controls.

3.7.3 Offsite Flood Impacts

1. The proposed development has negligible offsite impacts on the floodplain environment in the 1% AEP flood event.

2. There are no offsite impacts above 20 mm in the 1% AEP flood, hence the impacts are considered acceptable.

4 Summary

A detailed hydrologic and hydraulic model has been developed for the site consistent with Council's provided flood levels to assess local flood characteristics. The hydraulic model accurately replicates Council adopted flood characteristics.

The models were used to determine the existing and proposed flood conditions in the 1% AEP flood event. Modelling concluded that:

1. Proposed flood characteristics are largely consistent with existing conditions, and differences due to the proposed development are negligible.

2. The proposed fill pad effectively renders the site development area flood free in the 1% AEP flood, except for the site entrance which is inundated by low hazard flood water.

3. The proposed development would have no material offsite flood impacts.

4. Compliance with Council flood planning level requirements for industrial developments is achieved.

5 References

Bureau of Meteorology (2019), *Rainfall IFD Data System*, www.bom.gov.au/water/designRainfalls/revised-ifd/?year=2016.

Campbelltown City Council (2009), *Campbelltown (Sustainable City) Development Control Plan 2009 Volume 2 Engineering Design for Development*

Campbelltown City Council (2015), *Campbelltown Local Environmental Plan (LEP)*.

Campbelltown City Council (2015), *Campbelltown Development Control Plan (DCP)*.

Commonwealth of Australia (Geoscience Australia) (2019), *Australian Rainfall and Runoff – A Guide to Flood Estimation.*

DRAINS (2019), *DRAINS Content Menu*.

NSW Department of Infrastructure, Planning and Natural Resources (2005), *Floodplain Development Manual*.

XP-RAFTS (1996), User's Manual.

6 Attachment A: Site Survey

NOTES:

THE PURPOSE OF THIS SURVEY WAS TO OBTAIN TOPOGRAPHICAL DETAIL AS REPRESENTED ON THIS PLAN.IF IT IS INTENDED TO ERECT ADDITIONAL STRUCTURES OR FENCING ON THE SUBJECT PROPERTY, THEN THE BOUNDARIES SHOULD BE MARKED.

REDUCED LEVELS ARE BASED ON AUSTRALIAN HEIGHT DATUM (AHD) AND ARE SHOWN THUS +55.55.

CONTOURS ARE BASED ON AUSTRALIAN HEIGHT DATUM (AHD) AND ARE AT INTERVALS OF 0.25 METRES.

ORIGIN OF LEVELS IS SSM21860, RL43.216, VERTICAL ACCURACY C3 AS SUPPLIED BY LAND AND PROPERTY MANAGEMENT AUTHORITY DATED 12.06.2012.

COORDINATES ARE BASED ON THE MAP GRID OF AUSTRALIA (MGA).

A SCALE FACTOR OF 1.000 HAS BEEN USED FOR COORDINATE CALCULATIONS.

ORIGIN OF COORDINATES IS
PM52452 E300 333.552 N=6 232 216.354 HORIZONTAL ACCURACY B2, AND
SSM21860 E=300 351.580 N=6 232 778.428 HORIZONTAL ACCURACY C3 AS
SUPPLIED BY LAND AND PROPERTY MANAGEMENT AUTHORITY DATED 12.06.2012.

BOUNDARIES HAVE NOT BEEN DEFINED OR MARKED.

BEARINGS, DIMENSIONS AND AREAS SHOWN HEREON HAVE BEEN COMPILED FROM PUBLIC RECORDS AND ARE SUBJECT TO A BOUNDARY SURVEY.

LOCATION OF UTILITY FEATURES, AS SHOWN HEREON, HAVE BEEN DETERMINED FROM VISIBLE SURFACE INFORMATION AVAILABLE.

BEFORE ANY EXCAVATION COMMENCES ON SITE, THE CONTRACTOR/DESIGNER MUST INVESTIGATE UNDERGROUND UTILITY SERVICES.

DIAL 1100 BEFORE YOU DIG

OPEN DRAINAGE CHANNEL

32°49'40"
CHORD 107.29
ARC 107.55
RADIUS 428.24

40°01'30"
95.835

286°35'45"
138.17

205°42'00"
176.15

157°44'00"
CHORD 21.85
ARC 23.115
RADIUS 20

101
DP 818914

79
DP 1036540

52
DP 618900

51
DP 618900

4
DP 1076508

PEMBURY ROAD

MONTORE ROAD

EASEMENT TO DRAIN WATER 4 WIDE

EASEMENT TO DRAIN WATER 3 WIDE

EASEMENT TO DRAIN WATER 3.5 WIDE

EASEMENT TO DRAIN WATER 1.5 WIDE

EASEMENT FOR LANDSCAPING VARIABLE WIDTH

EMBANKMENT

PATHWAY

STOCKPILE

GRASS

GRAVEL

BENCH MARK
DHW ON KERB
RL 42.22 AHD

CLIENT
CONCRETE RECYCLERS

B	REMOVAL OF SITE SHED	16/06/2017	
A	INITIAL ISSUE	15/06/2017	
REVISION		DATE	ZONE

Contour Interval 0.25m
Datum A.H.D
BM SSM21860
RL 43.216

Scale 1:500 @ A1

Surveyed MS 01/06/2017
Drawn MS 15/06/2017
Checked MS 15/06/2017
Approved .....

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DETAIL SURVEY

SITE LEVELS
No.7 MONTORE ROAD
MINTO

Proj No. S5241.004 **Rev B**

Sheet No. 1 of 1
CH5241A4_REVB
A1

7 Attachment B: Campbelltown City Council Flood Data

3 October 2019

Lee Zhou
lzhou@martens.com.au

Dear Sir/ Madam

Flood advice – 7 Montore Road, Minto

Council refers to your flood advice requested, dated 10 July 2019 for the abovementioned property.

Council advises as follows:

1. The abovementioned property is a Flood Control Lot with respect to 1% Annual Exceedance Probability (AEP) flood due.

   A Flood Control Lot is defined in the State Environment Planning Policy (Exempt and Complying Development Codes) 2008 - REG 1.5 as "a lot to which flood related development controls apply in respect of development for the purposes of industrial buildings, commercial premises, dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (other than development for the purposes of group homes or seniors housing).

2. In accordance with the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, I can confirm that the abovementioned property is **NONE** of the following:

   - Flood storage area
   - Floodway area
   - Flow path
   - High hazard area
   - High risk area

3. The minimum fill and floor level controls for any development on this property due to a 1% AEP flood event are provided in the table and shown on the enclosed Fill Level and Floor Level Location Plan.

Location	Minimum Fill Level (1% AEP Flood Level) (m AHD)	Minimum Floor Level (m AHD)
A	43.2	43.7
B	43.5	43.8
C	42.5	43.0
D	42.4	42.9
E	42.4	42.9

4. Please note that the required finished floor levels (FFL's) are defined by the relevant 1% flood level plus freeboard as defined in Table 4.1 of Council's Engineering Design for Development. Council does not have any information regarding floor levels of the existing building and if concerns are held with respect to any areas of the site, floor levels may need to be confirmed by a registered surveyor.
5. Any development of this site will require drainage to be accommodated in accordance with the Campbelltown City Council Engineering Design Guide for Development.
6. The floor level of the building must also comply with the requirements set out in Clause 3.1.2.3 of Volume 2 of the Building Code of Australia and Section 4.5 of the Engineering Design Guide for Development. Further controls may be applied at development application stage if the site is affected by a Section 88B (Conveyancing Act) Restriction.
7. Development consent and/or construction consent may be required for any development of this property.
8. The requested Council Stormwater Network Plan is attached.

If you require any further information, please contact Council's Coordinator Stormwater and Structural Design, Cathy Kinsey via email at cathy.kinsey@campbelltown.nsw.gov.au.

Yours sincerely

per Mark Wolczak
Executive Manager Infrastructure

AB

CAMPBELLTOWN CITY COUNCIL

7 Montore Road,
Minto

Fill Level and Floor Level Location Plan

N
W
E
S

Accuracy of the information shown on this plan is not guaranteed.

All service levels and locations should be confirmed on site.

Council does not have details of drainage lines within private property where these service only private lots.

The contour information is based on Airbo LaserSurvey provided by NSW Land and Property Information 2011. Any changes to the topography since that time may not be reflected in these plans.

8 Attachment C: Flood Assessment Planset

PROJECT: MINTO CONCRETE RECYCLERS

PLANSET: FLOOD ASSESSMENT

CLIENT: CONCRETE RECYCLERS

LOCALITY PLAN
NOT TO SCALE

LGA: CAMPBELLTOWN CITY COUNCIL

7 MONTORE ROAD, MINTO, NSW
LOT 52 DP 618900

DRAWING LIST		
DWG NO.	REV	DWG TITLE
GENERAL		
PS03-A000	B	COVER SHEET
FLOODING		
MODEL SETUP		
PS03-K000	A	CATCHMENT PLAN
MODEL RESULTS		
PS03-K100	B	1% AEP CRITICAL STORM DURATION EXISTING CONDITION WATER LEVEL (mAHD) & WATER DEPTH (m)
PS03-K101	B	1% AEP CRITICAL STORM DURATION EXISTING CONDITION WATER VELOCITY (m/s)
PS03-K102	B	1% AEP CRITICAL STORM DURATION EXISTING CONDITION PROVISIONAL HYDRAULIC HAZARD CATEGORIES
PS03-K200	B	1% AEP CRITICAL STORM DURATION PROPOSED CONDITION WATER LEVEL (mAHD) & WATER DEPTH (m)
PS03-K201	B	1% AEP CRITICAL STORM DURATION PROPOSED CONDITION WATER VELOCITY (m/s)
PS03-K202	B	1% AEP CRITICAL STORM DURATION PROPOSED CONDITION PROVISIONAL HYDRAULIC HAZARD CATEGORIES
PS03-K300	B	1% AEP CRITICAL STORM DURATION PROPOSED CONDITION WATER LEVEL IMPACT (m)

DEVELOPMENT APPLICATION - NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
B	MINOR AMENDMENTS	06/08/2021	RK	LZ	SL	TH
A	INITIAL RELEASE	22/11/2019	GM	LZ	SL	TH

SCALE

GRID | DATUM | PROJECT MANAGER: TH

CLIENT: CONCRETE RECYCLERS

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
FLOOD ASSESSMENT
7 MONTORE ROAD, MINTO, NSW
LOT 52 DP 618900

martens & Associates Pty Ltd
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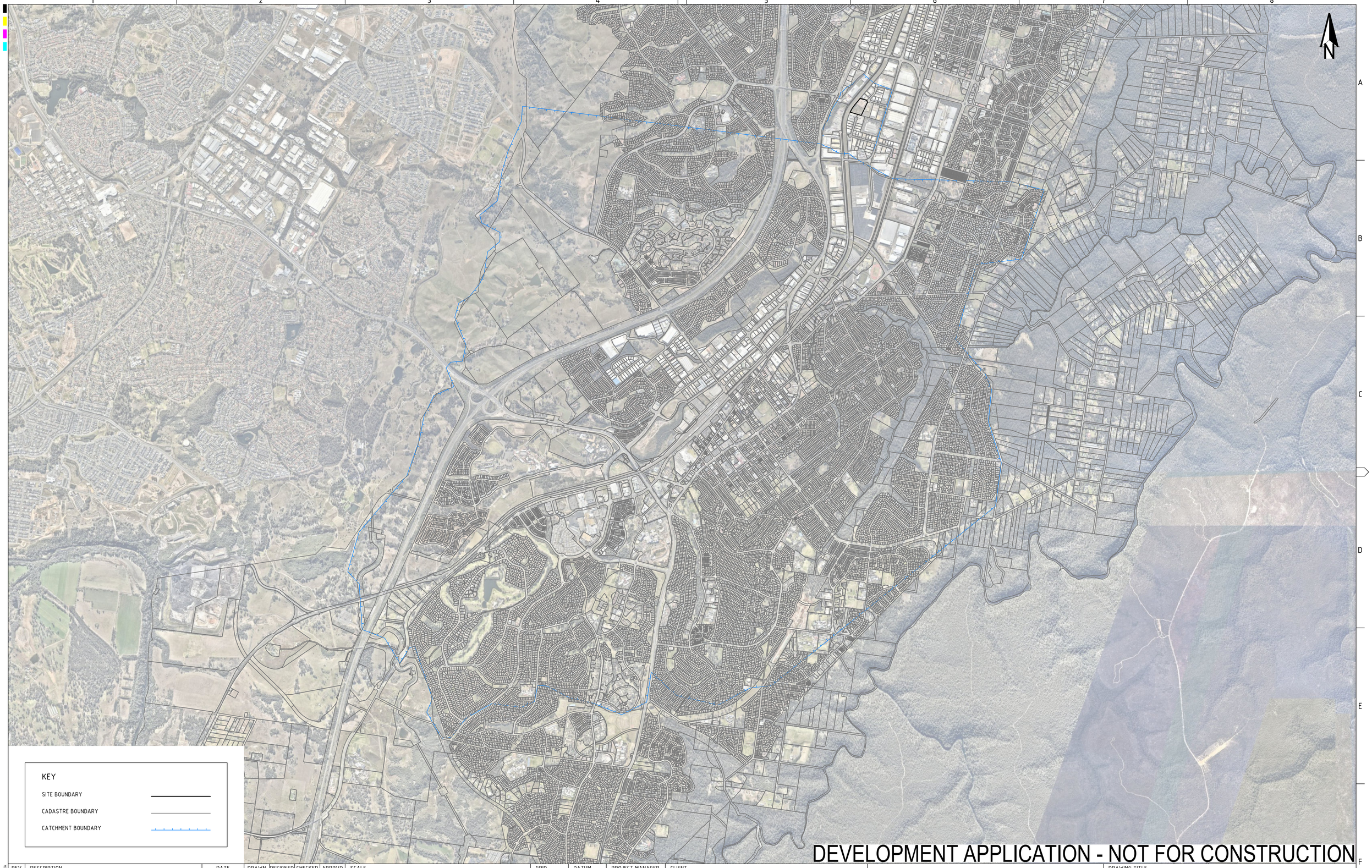
DRAWING TITLE: COVER SHEET

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS03	R03	PS03-A000	B

DRAWING ID: P1203464-PS03-R03-A000

PRINTED: 17.08.2021 - USER: RKOLANDOZHA

A1 / A3 LANDSCAPE (A1LC_v02.0.01)



KEY

SITE BOUNDARY

CADASTRE BOUNDARY

CATCHMENT BOUNDARY

DEVELOPMENT APPLICATION - NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
A	INITIAL RELEASE	22/11/2019	GM	LZ	SL	TH

SCALE

0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 KILOMETRES

A1 (A3) 1:20,000 (1:40,000)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

CLIENT

CONCRETE RECYCLERS

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PROJECT NAME/PLANSET TITLE

MINTO CONCRETE RECYCLERS

FLOOD ASSESSMENT

7 MONTORE ROAD, MINTO, NSW

LOT 52 DP 618900

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DRAWING TITLE

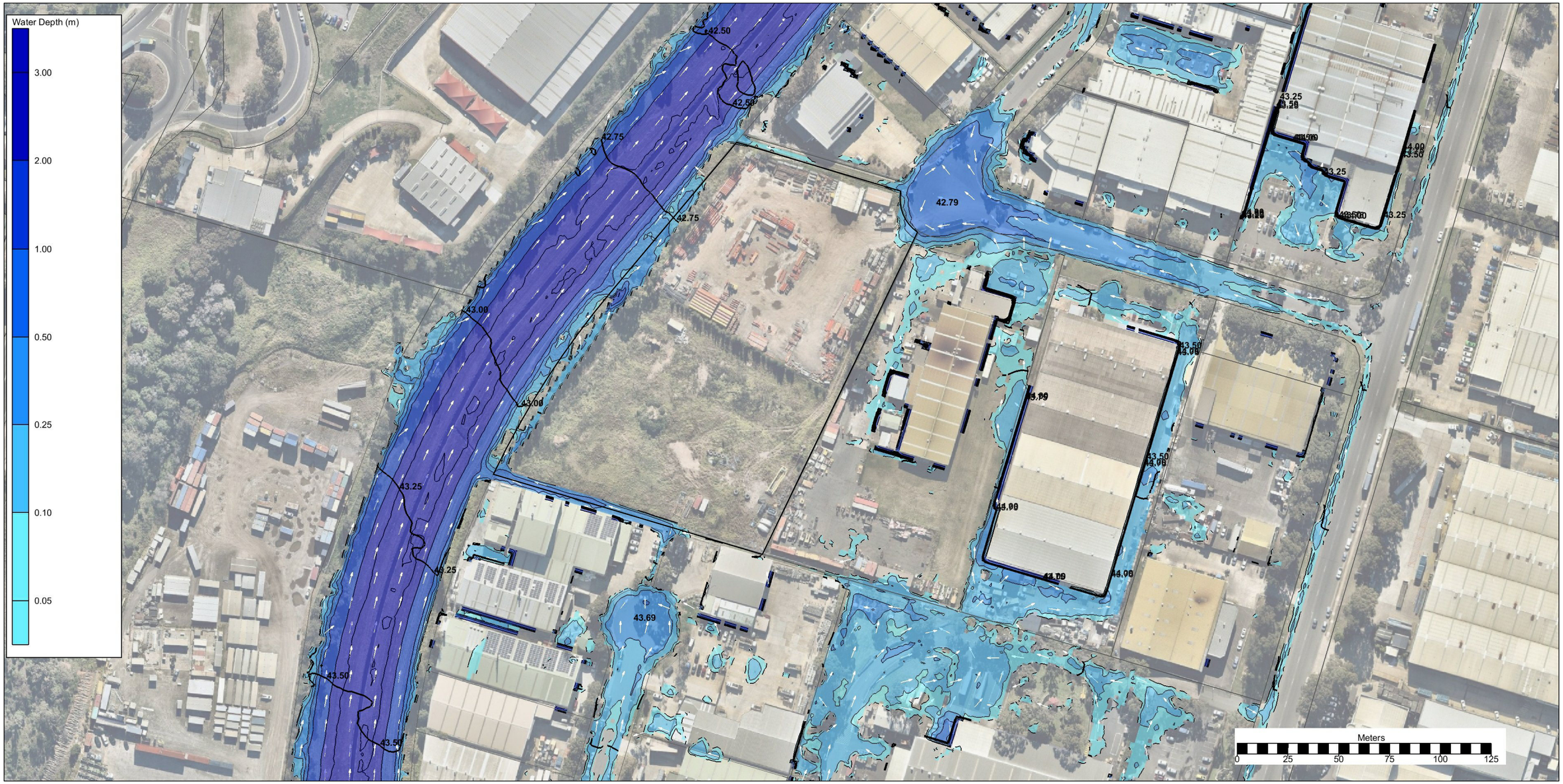
CATCHMENT PLAN

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS03	R03	PS03-K000	A

DRAWING ID: P1203464-PS03-R03-K000

PRINTED: --- - USER: RIVILA\MDOZHA

A1 / A3 LANDSCAPE (A1LC_v02.0.01)



KEY

SITE BOUNDARY

DEVELOPMENT APPLICATION - NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
B	MINOR AMENDMENTS	06/08/2021	RK	LZ	SL	TH
A	INITIAL RELEASE	22/11/2019	GM	LZ	SL	TH

SCALE
0 10 20 30 40 50 60 70 80 90 100 METRES
A1 (A3) 1:1,000 (1:2,000)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

CLIENT
CONCRETE RECYCLERS

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
FLOOD ASSESSMENT
7 MONTORE ROAD, MINTO, NSW
LOT 52 DP 618900

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DRAWING TITLE
1% AEP CRITICAL STORM DURATION
EXISTING CONDITION
WATER LEVEL (mAHD) & WATER DEPTH (m)

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS03	R03	PS03-K100	B

DRAWING ID: P1203464-PS03-R03-K100

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A1 / A3 LANDSCAPE (A1LC_v02.0.01)

KEY

SITE BOUNDARY

DEVELOPMENT APPLICATION - NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
B	MINOR AMENDMENTS	06/08/2021	RK	LZ	SL	TH
A	INITIAL RELEASE	22/11/2019	GM	LZ	SL	TH

SCALE
0 10 20 30 40 50 60 70 80 90 100 METRES
A1 (A3) 1:1,000 (1:2,000)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

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MINTO CONCRETE RECYCLERS
FLOOD ASSESSMENT
7 MONTORE ROAD, MINTO, NSW
LOT 52 DP 618900

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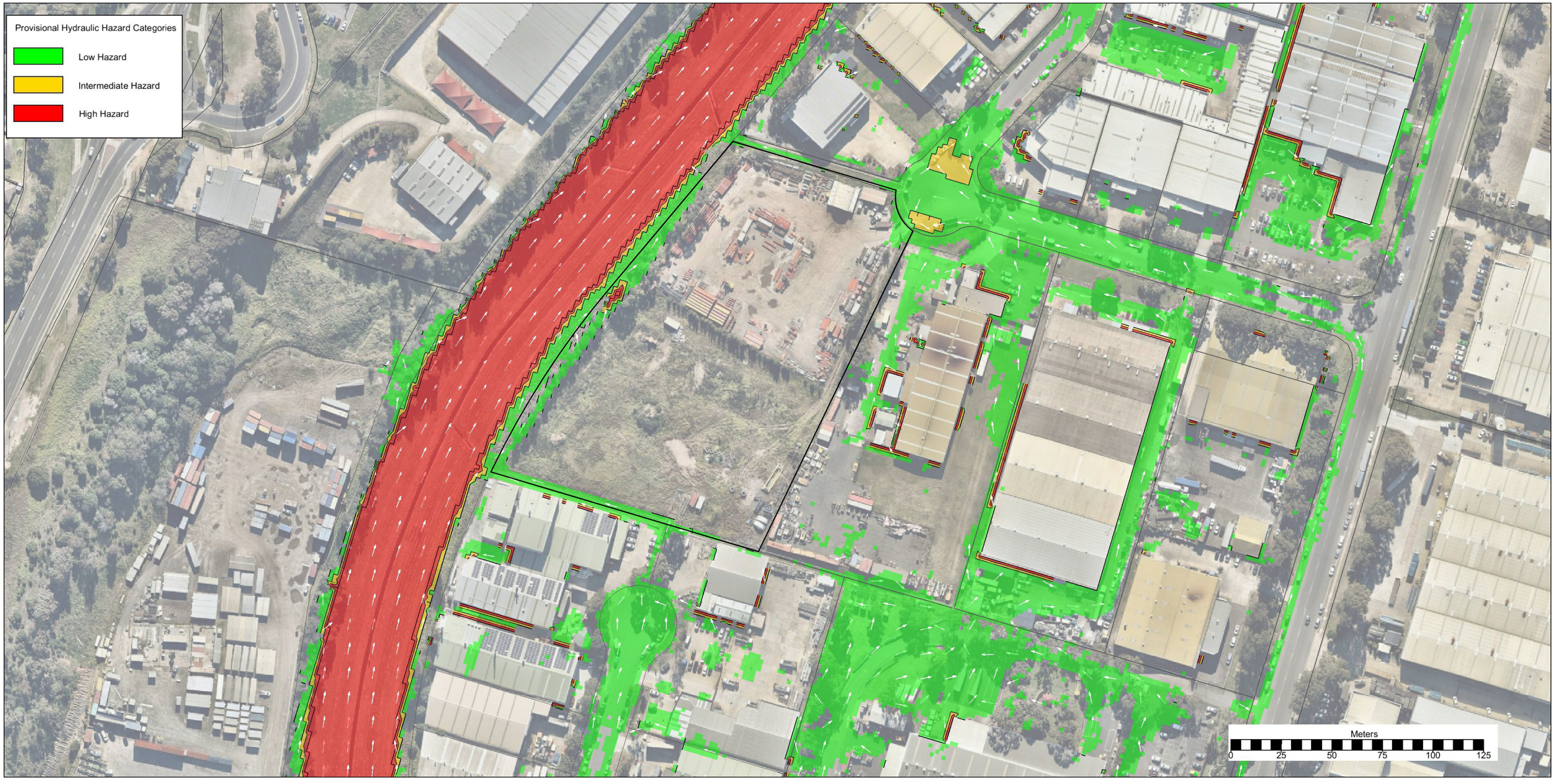
DRAWING TITLE
1% AEP CRITICAL STORM DURATION
EXISTING CONDITION
WATER VELOCITY (m/s)

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS03	R03	PS03-K101	B

DRAWING ID: P1203464-PS03-R03-K101

PRINTED: ---- - USER: RKIL-MONDIZHA
A1 / A3 LANDSCAPE (A1LC_v02.0.01)



NOTES:
- HYDRAULIC HAZARD BASED ON NSW GOVERNMENT (2005) FLOODPLAIN DEVELOPMENT MANUAL PROVISIONAL HYDRAULIC HAZARD CATEGORIES.

KEY

SITE BOUNDARY

DEVELOPMENT APPLICATION - NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
B	MINOR AMENDMENTS	06/08/2021	RK	LZ	SL	TH
A	INITIAL RELEASE	22/11/2019	GM	LZ	SL	TH

SCALE
0 10 20 30 40 50 60 70 80 90 100 METRES
A1 (A3) 1:1,000 (1:2,000)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

CLIENT
CONCRETE RECYCLERS

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
FLOOD ASSESSMENT
7 MONTORE ROAD, MINTO, NSW
LOT 52 DP 618900

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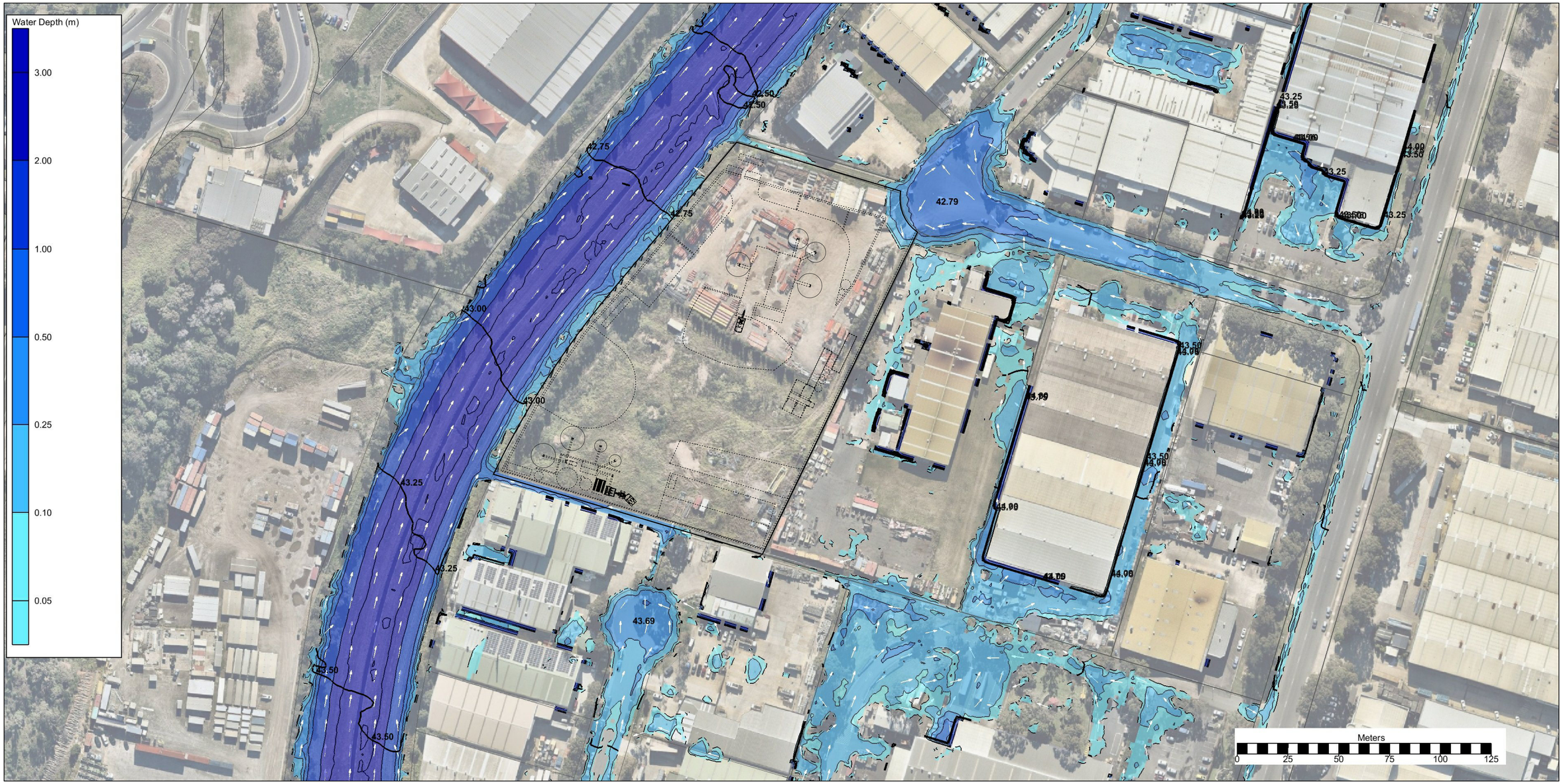
DRAWING TITLE
1% AEP CRITICAL STORM DURATION
EXISTING CONDITION
PROVISIONAL HYDRAULIC HAZARD CATEGORIES

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS03	R03	PS03-K102	B

PRINTED: --- - USER: RKALANDOTHA
A1 / A3 LANDSCAPE (A1LC_v02.0.01)
DRAWING ID: P1203464-PS03-R03-K102



KEY

SITE BOUNDARY

PROPOSED LOT LAYOUT .....

DEVELOPMENT APPLICATION - NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
B	MINOR AMENDMENTS	06/08/2021	RK	LZ	SL	TH
A	INITIAL RELEASE	22/11/2019	GM	LZ	SL	TH

SCALE
0 10 20 30 40 50 60 70 80 90 100 METRES
A1 (A3) 1:1,000 (1:2,000)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

CLIENT
CONCRETE RECYCLERS

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
FLOOD ASSESSMENT
7 MONTORE ROAD, MINTO, NSW
LOT 52 DP 618900

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DRAWING TITLE
1% AEP CRITICAL STORM DURATION
PROPOSED CONDITION
WATER LEVEL (mAHD) & WATER DEPTH (m)

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS03	R03	PS03-K200	B

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A1 / A3 LANDSCAPE (A1LC_v02.0.01)
DRAWING ID: P1203464-PS03-R03-K200

KEY

SITE BOUNDARY

PROPOSED LOT LAYOUT .....

DEVELOPMENT APPLICATION - NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
B	MINOR AMENDMENTS	06/08/2021	RK	LZ	SL	TH
A	INITIAL RELEASE	22/11/2019	GM	LZ	SL	TH

SCALE
0 10 20 30 40 50 60 70 80 90 100 METRES
A1 (A3) 1:1,000 (1:2,000)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

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CLIENT
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PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
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7 MONTORE ROAD, MINTO, NSW
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DRAWING TITLE
1% AEP CRITICAL STORM DURATION
PROPOSED CONDITION
WATER VELOCITY (m/s)

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS03	R03	PS03-K201	B

DRAWING ID: P1203464-PS03-R03-K201

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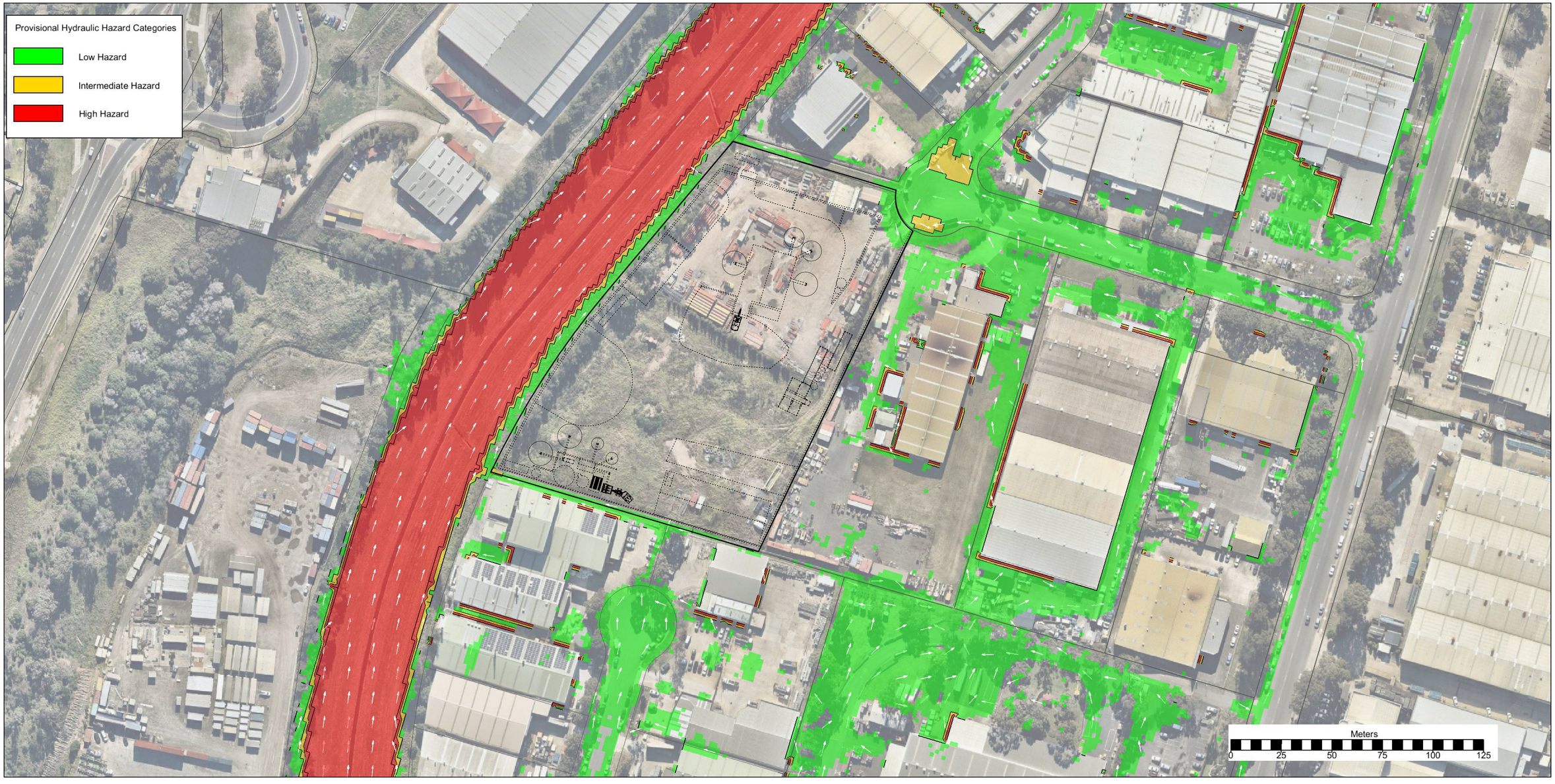
A1 / A3 LANDSCAPE (A1LC_v02.0.01)



KEY

SITE BOUNDARY

PROPOSED LOT LAYOUT .....

NOTES:
- HYDRAULIC HAZARD BASED ON NSW GOVERNMENT (2005) FLOODPLAIN DEVELOPMENT MANUAL PROVISIONAL HYDRAULIC HAZARD CATEGORIES.

DEVELOPMENT APPLICATION - NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
B	MINOR AMENDMENTS	06/08/2021	RK	LZ	SL	TH
A	INITIAL RELEASE	22/11/2019	GM	LZ	SL	TH

SCALE
0 10 20 30 40 50 60 70 80 90 100 METRES
A1 (A3) 1:1,000 (1:2,000)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

CLIENT
CONCRETE RECYCLERS

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
FLOOD ASSESSMENT
7 MONTORE ROAD, MINTO, NSW
LOT 52 DP 618900

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DRAWING TITLE
1% AEP CRITICAL STORM DURATION
PROPOSED CONDITION
PROVISIONAL HYDRAULIC HAZARD CATEGORIES

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS03	R03	PS03-K202	B

PRINTED: --- - USER: RKALANDOUTAH
A1 / A3 LANDSCAPE (A1LC_v02.0.01)
DRAWING ID: P1203464-PS03-R03-K202

KEY

SITE BOUNDARY

PROPOSED LOT LAYOUT .....

NOTES:
- AREAS COLOURED WHITE REPRESENT NEGLIGIBLE CHANGE.
- AREAS COLOURED YELLOW / RED REPRESENT WATER LEVEL INCREASE.

DEVELOPMENT APPLICATION - NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
B	**MINOR AMENDMENTS**	**06/08/2021**	**RK**	**LZ**	**SL**	**TH**
A	INITIAL RELEASE	22/11/2019	GM	LZ	SL	TH

SCALE
0 10 20 30 40 50 60 70 80 90 100 METRES
A1 (A3) 1:1,000 (1:2,000)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

CLIENT
CONCRETE RECYCLERS

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
FLOOD ASSESSMENT
7 MONTORE ROAD, MINTO, NSW
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DRAWING TITLE
1% AEP CRITICAL STORM DURATION
PROPOSED CONDITION
WATER LEVEL IMPACT (m)

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS03	R03	PS03-K300	B

DRAWING ID: P1203464-PS03-R03-K300

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A1 / A3 LANDSCAPE (A1LC_v02.0.01)