

cityscapeplanning+projects

STATEMENT OF ENVIRONMENTAL EFFECTS

PROPOSED SHED

259 WEST WILCHARD RD, CASTLEREAGH

OCTOBER 2018

cityscape planning + projects

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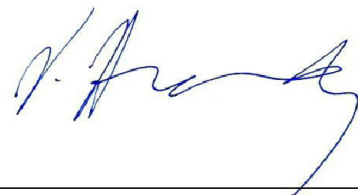
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This report has been prepared by:



Vince Hardy BTP, RPIA
URBAN PLANNING CONSULTANT



cityscape planning + projects, 2018

This report is provided to accompany a Development Application to be lodged on the subject land and is to be used for that purpose solely and for the client exclusively. No liability is extended for any other use or to any other party. Whilst the report is derived in part from our knowledge and expertise, it is based on the conditions prevailing at the time of the Report and upon the information provided by the client.

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1.0 INTRODUCTION

Cityscape Planning + Projects has been engaged by the owner of the subject site to prepare a Statement of Environmental Effects to accompany a Development Application to be lodged on the subject site.

The report has been compiled, through on ground investigations, research, analysis and discussions with planning officers from *Penrith City Council* and is to be read in conjunction with the accompanying plans and reports.

2.0 THE SUBJECT SITE

The subject site is a large (area of 5.791ha) irregular shaped parcel of land located on the southern eastern side of West Wilchard Rd and Castlereagh Rd, Castlereagh. A plan showing the locality of the site is provided at Figure 1.

The site has historically formed part of the Penrith Lakes Scheme and represents the northern western corner of the Lakes Scheme Lands.

The site is known as 259 West Wilchard Rd, Castlereagh, but has the following real property description:

Lots: 1 DP: 1181666

Figure 2 and 3 provide a cadastral plan and aerial photo of the site.

FIGURE 1: LOCATION OF SITE



FIGURE 2: CADASTRAL + TOPOGRAPHIC PLAN

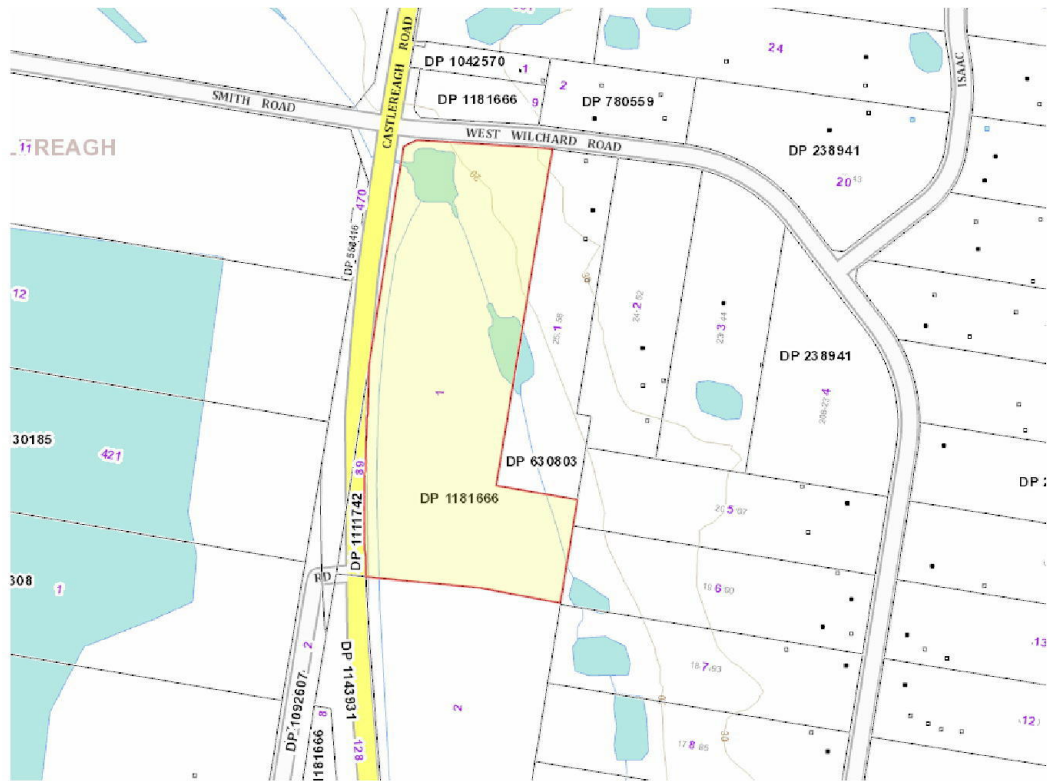


FIGURE 3: AERIAL PHOTO



3.0 DEVELOPMENT PROPOSAL

The development application seeks council consent to the construction of shed adjacent to the recently approved (DA18/0218) dwelling house.

The proposed shed will have dimensions of 18m length x 12m wide and a height of 4.2m and also includes a 6m wide awning at its northern elevation. The shed will be constructed with a metal frame and finished with metal cladding to its walls and roof.

The proposed development will also require an extension of the existing building platform through additional earthworks to create a level building platform for the shed. These earthworks involve a maximum cut of 1.0m, fill of 1.64m and require net fill material of 1547m².

Detailed plans of the development proposal accompany the Development Application.

4.0 STATUTORY SITUATION

4.1 ZONING

The subject site is zoned 'Residential' pursuant to *State Environmental Planning Policy (Penrith Lakes Scheme) 1989*. An extract of that zoning map is provided at Figure 5.

4.2 PERMISSIBILITY OF DWELLING

The land use table to this zone identifies a *Dwelling house* as a permissible land use in the zone. The proposed shed will be located within the curtilage of the approved dwelling house and can therefore be reasonably be considered to be an ancillary element of that dwelling house.

Council can therefore approve the development proposal.

FIGURE 5: SEPP ZONING MAP



5.0 SITE ANALYSIS

5.1 SITE DIMENSIONS

The site is a large 'L' shaped parcel with a total area of 5.791 ha. It has a frontage of 110m to West Wilchard Rd and a depth of approximately 408m.

5.2 TOPOGRAPHY

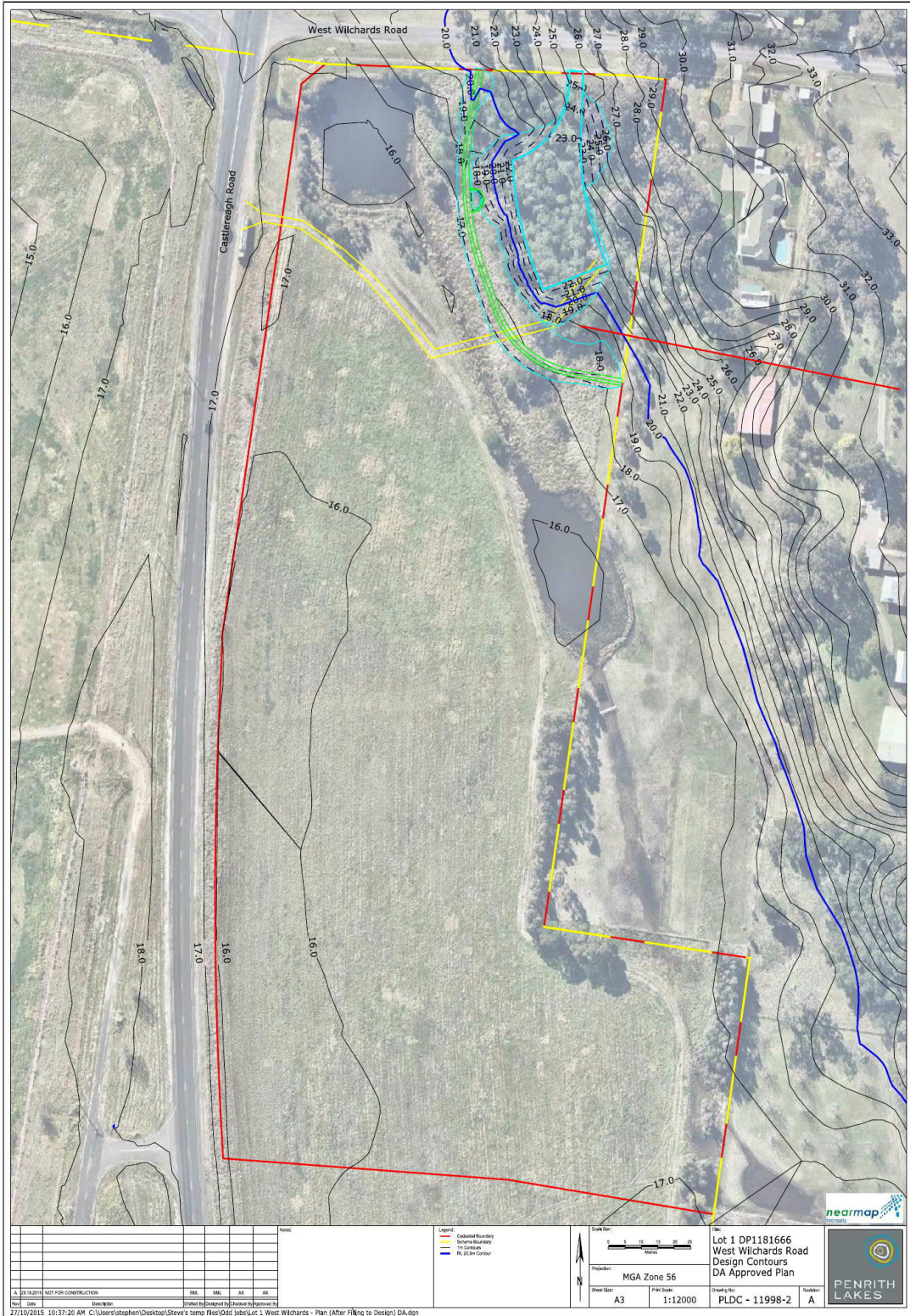
The site provides flood plain type topography at its western and southern sections before rising up steeply in its north-eastern section. A level platform area has been provided in that section. The general topography of the site and broader area is represented at Figure 2 and 6. It is this existing platform area and a proposed small extension where the shed is to be sited.

5.3 DRAINAGE & FLOODING

The site provides a drainage line at the northern section, which is represented as lower order stream and two rural type dams. The location of these drainage features are represented at the topographic plan provided at Figures 2 and 4.

This watercourse and the broader site drains southwards where it initially enters the Lewis Lagoon and then the Wildlife Lake stormwater treatment trains regime currently provided at the north eastern extent of the Lakes Scheme.

FIGURE 6 EXISTING SITE TOPOGRAPHY



Site of
proposed
shed

The 'Flood Planning Level' (FPL) is also defined in the *SEPP (Penrith Lakes Scheme) 1989* as the level of a 1:100 ARI flood event plus 1 metre freeboard.

Written advice from Penrith Council (See Annexure A) identifies a mainstream 1% Annual Exceedence Probability (AEP) flood level for the site of 20.6m AHD.

Alternatively, the 100 year ARI in the 2012 Stage 1 Water Management Plan, which has been approved by the Minister for future residential land is RL21.7 AHD.

The topographic plan provided as part of the development application demonstrates that the proposed platform area has a RL 21.3 AHD and the proposed FFL of the shed is RL21.8 AHD.

5.4 FLORA + FAUNA

The site has largely been cleared of vegetation as part of previous development and use of the site.

Vegetation in the lower sections of the site is dominated by exotic grasses as well as some native grass (*Carex appressa*).

A detailed flora and fauna review accompanies the Development Application.

5.5 ABORIGINAL & EUROPEAN HERITAGE

A search of Council and NSW databases has confirmed that neither the subject site nor lands within the immediate vicinity of the site are identified as containing any identified items of Aboriginal or European heritage. Written confirmation of the absence of Aboriginal heritage is provided at Annexure B.

Further, an Aboriginal Heritage Impact Permit has also been granted over the broader Lakes Scheme site inclusive of the subject site. A copy of this permit was provided as part of the recent DA's for earthworks and the dwelling house.

5.6 SERVICES & INFRASTRUCTURE

The site enjoys access to *Sydney Waters* reticulated water but not sewer services. Power and communication services are also available to the site.

5.7 PREVIOUS DEVELOPMENT

The site has formerly been part of the Penrith Lakes Scheme and as such has experienced sand and gravel extraction pursuant to DA4 of The lakes Scheme, which was issued on 9 September 1988.

5.8 ADJACENT DEVELOPMENT

Lands to the west of the subject site accommodate the Penrith Lakes Scheme. Adjoining lands to the north, south and east provide rural scaled lots and development of a similar scale and type to that

ultimately proposed to be developed on the subject site. This development land fragmentation pattern is evident at the cadastral plan provided at Figure 10.

FIGURE 10: PREVAILING LAND FRAGMENTATION PATTERN

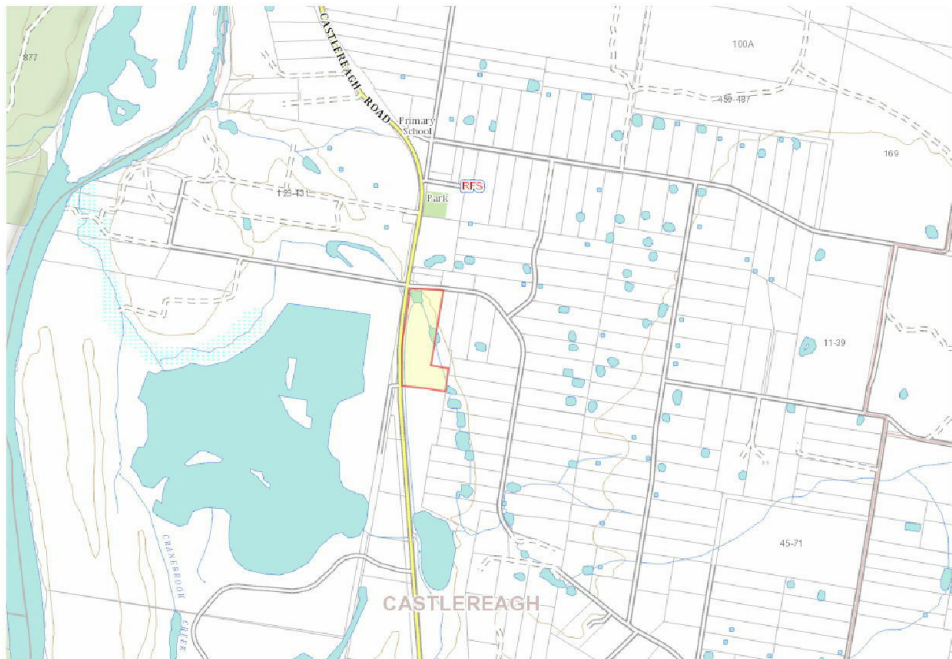
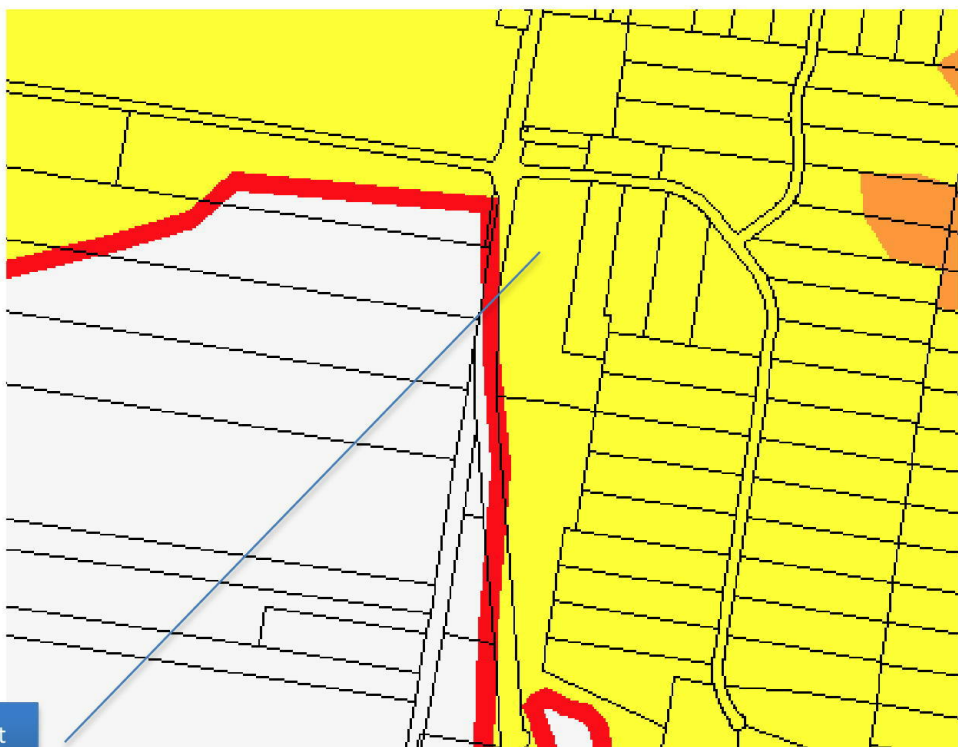


FIGURE 11: COUNCIL BUSHFIRE MAP



Subject
site

5.9 HAZARDS & NUISANCE

Only the lower sections of the site are identified as being flood prone as previously discussed at section 5.3 of this report. The site is also identified as being bushfire prone land on the relevant Council map. An extract of that map is provided at Figure 11. However, the development poses no bushfire threat or hazard.

6.0 PLANNING ASSESSMENT

6.1 THE PROVISION OF ANY ENVIRONMENTAL PLANNING INSTRUMENT

6.1.1 SEPP No 55 – REMEDIATION OF LAND

The object of this Policy is to provide for a State wide planning approach to the remediation of contaminated land. In particular, this Policy aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment:

- (a) by specifying when consent is required, and when it is not required, for a remediation work, and
- (b) by specifying certain considerations that are relevant in rezoning land and in determining development applications in general and development applications for consent to carry out a remediation work in particular, and
- (c) by requiring that a remediation work meet certain standards and notification requirements

A Site Audit Statement and Final Validation Report have been taken for the site and adjacent Lakes Scheme lands. The site audit concludes that remediation and validation works have been appropriately implemented and in conjunction with the investigation works that were previously conducted. The auditor also considers that the site is suitable for residential land use with access to soil, including less sensitive land uses such as recreational, park and open space.

A VENM report was also provided for previous DA for the earthworks and dwelling. This report concludes that only natural VENM materials have been placed on site and therefore presents no significant risk to human health or the environment.

This information has been reviewed by Council and found to be satisfactory as part of their previous assessment of the previously approved DA's.

6.1.2 SEPP (STATE AND REGIONAL DEVELOPMENT) 2011

This SEPP aims to identify state and regionally significant development and the development assessment process for such development. Schedule 2 to the SEPP identifies certain sites that have been declared to provide state significant development. This schedule references the Penrith Lakes and an extract is provided below:

8 Development at Penrith Lakes Site

Development on land identified as being within the Penrith Lakes Site on the State Significant Development Sites Map if the development is for the purposes of extraction, rehabilitation or lake formation (including for the purposes of associated infrastructure on land located within or outside that Site).

The site is located with the identified Penrith Lakes, however the development is not for the purposes of extraction, rehabilitation or lake formation and therefore the SEPP Is not relevant to this development proposal.

6.1.3 SEPP (PENRITH LAKES) 1989

The SEPP is the primary environmental planning instrument that applies to the subject site. The aims of this plan are as follows:

2 Aims of Policy

The aims of this Policy are as follows:

- (a) to provide a development control process that ensures that environmental and technical matters are considered in the implementation of the Penrith Lakes Scheme,*
- (b) to identify and protect items of the environmental heritage,*
- (c) to identify certain land that may be rezoned for employment, environmental, parkland, residential, tourism and waterway purposes and land that will be rezoned as unzoned land,*
- (d) to permit interim development that will not detrimentally impact on the implementation of the Penrith Lakes Scheme,*
- (e) to ensure that the implementation of the Penrith Lakes Scheme does not detrimentally impact on the ongoing operation and use of olympic legacy infrastructure, including the Sydney International Regatta Centre and the Penrith Whitewater Stadium.*

The development does not cause any inconsistency with any of these objectives.

Other key provisions of the SEPP are addressed below:

Part 2 Development Control

7 Development generally

A person shall not carry out development on land to which this Policy applies except development authorised by or under this Policy.

The developments permissibility has been demonstrated as part of previous sections of this report.

8 Development for the purposes of implementing the Penrith Lakes Scheme

(1) Development for the purposes of implementing the Penrith Lakes Scheme may, with development consent, be carried out on land to which this Policy applies.

Not relevant as the development proposal does not seek to implement the Penrith Lakes Scheme.

Part 3 Permitted or prohibited development on zoned land

Residential

1 Objectives of zone

- To provide for low-impact residential development in areas with special ecological, scientific or aesthetic value.***
- To ensure that residential development does not have an adverse effect on those values.***
- To minimise the potential for conflict between development in residential areas and land uses within adjoining zones.***
- To ensure that land uses are compatible with the available infrastructure, services and facilities and with the environmental capabilities of the land.***
- To preserve and improve natural resources through appropriate land and water quality management practices.***

The development seeks simply to provide an extended building platform and shed as an ancillary element of the approved residential development of the site.

The accompanying Flood Impact advice from (see Annexure C) concludes that the earthworks on the subject site provide negligible impact on the 1% AEP flood extent and negligible impact on available flood storage volume.

Further, all works will be undertaken utilising appropriate land and water quality management measures.

The development therefore causes no inconsistency with the relevant zone objectives.

Part 5 Additional provisions for zoned land

25 Development on land zoned Residential

(1) Development consent must not be granted for development on land zoned Residential unless the consent authority is satisfied that the number of dwellings on all land zoned Residential will not exceed 30.

The subject development seeks simply to provide ancillary works to the approved residential development of the site.

No new residential development is proposed or will be facilitated by the development.

Accordingly, the development proposes nothing that could be expected to exceed the 30 dwelling maximum for the broader Lakes Scheme site.

(2) Development consent must not be granted for development on land zoned Residential unless the consent authority has considered the following:

(a) an Aboriginal cultural heritage assessment for the land (being a written report detailing the results of the assessment and recommendations for actions to be taken before, during and after an activity to manage and protect Aboriginal objects and declared Aboriginal places identified by the investigation and assessment) that has been prepared by a suitably qualified person,

The site has been the subject of significant Aboriginal cultural heritage assessment as part of the Penrith Lakes Scheme works.

As a consequence of this previous assessment and consideration an Aboriginal Heritage Impact Permit (AHIP) has already been issued for the subject site.

PLDC have also previously provided an Aboriginal Cultural Management Plan (CMP) for the broader Lakes Scheme Site to the Department of Planning and Penrith City Council. The proposed development causes no inconsistency with that CMP.

The development therefore is considered to satisfy this clause of the SEPP.

(b) a geotechnical assessment that has been prepared by a suitably qualified person and demonstrates that a stable development platform exists for the development,

Detailed geotechnical testing has been undertaken for the subject site and has been provided as part of previous approved DA's. This testing concludes that all previous earthworks comply with the landform specifications for urban land.

(c) an evacuation plan that is prepared by an emergency services organisation and endorsed by the NSW State Emergency Service as being appropriate for the development.

There is no formal process for the preparation or even endorsement of an evacuation plan by the NSW State Emergency Service. It is therefore hard to understand how this requirement can ever be met.

Nevertheless, Molino Stewart Pty Ltd is an environmental and natural hazards consultancy, which has been involved in flood emergency planning in the Hawkesbury Nepean Valley since the company's inception in 1995. This consultancy is currently preparing a flood evacuation strategy for this land and other adjacent residential zoned lands with the SEPP.

In summary, the evacuation plan for the is to evacuate by vehicle within the ample warning period and if not then walk/drive out on rising grade on West Wilchards Road above the flood and to stay with neighbours until the flood subsides.

Regardless, the development proposal does not propose of facilitate any new or additional residential development and as such does not generate any modified or additional requirement for evacuation.

Part 6 Miscellaneous provisions

31 Earthworks

(1) The objective of this clause is to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land.

(2) Development consent is required for earthworks unless:

(a) the earthworks are exempt development under an applicable environmental planning instrument, or

(b) the earthworks are ancillary to development that is permitted without consent under this Policy or to development for which development consent has been given.

(3) Before granting development consent for earthworks (or for development involving ancillary earthworks), the consent authority must consider the following matters:

(a) the likely disruption of, or any detrimental effect on, drainage patterns and soil stability in the locality of the development,

The development is well removed from any natural drainage line and not of scale to have any effect on drainage patterns.

(b) the effect of the development on the likely future use or redevelopment of the land,

The development will facilitate an extended development platform for a shed. This land use outcome is consistent with the zoning and proposed future use of the site.

(c) the quality of the fill or the soil to be excavated, or both,

A VENM report accompanies previous DA's on the site. All new fill will be appropriately sourced to ensure that it is also VENM.

(d) the effect of the development on the existing and likely amenity of adjoining properties,

The finished site levels and profile are of limited scale and sufficiently removed from the neighbouring properties to ensure that they cause no adverse amenity impacts.

(e) the source of any fill material and the destination of any excavated material,

A VENM report accompanies previous DA's on the site. All new fill will be appropriately sourced to ensure that it is also VENM.

(f) the likelihood of disturbing relics,

Previous detailed assessment of the sites heritage has determined that there is very limited likelihood of disturbing any relics.

(g) the proximity to, and potential for adverse impacts on, any waterway, drinking water catchment or environmentally sensitive area,

The development is well removed from any natural drainage lines and is not in any drinking water catchment.

(h) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.

All relevant measure to mitigate adverse environmental impacts will be undertaken as part of the earthworks and development and the finished stabilised land form will present no potential to cause adverse environmental impacts.

33 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 the land,***
- (b) to allow development on land that is compatible with the land's flood hazard, taking into account projected changes as a result of climate change,***
- (c) to avoid significant adverse impacts on flood behaviour and the environment.***

The 'Flood Planning Level' (FPL) is also defined in the *SEPP (Penrith Lakes Scheme) 1989* as the level of a 1:100 ARI flood event plus 1 metre freeboard.

Written advice from Penrith Council (See Annexure A) identifies a mainstream 1% Annual Exceedence Probability (AEP) flood level for the site of 20.6m AHD.

Alternatively, the 100 year ARI in the 2012 Stage 1 Water Management Plan, which has been approved by the Minister for future residential land is RL21.7 AHD.

Regardless of which flood level is used, the proposed fill platform and shed is to have a finished level of 21.8m and is therefore above both flood levels.

The accompanying Flood Impact advice from BMT concludes that the earthworks on the subject site provide negligible impact on the 1% AEP flood extent and negligible impact on available flood storage volume

The development therefore causes no inconsistency with the clause objectives.

Part 7 Urban release area

34 Arrangements for designated State public infrastructure

(1) The objective of this clause is to require satisfactory arrangements to be made for the provision of designated State public infrastructure before the subdivision of land in an urban release area to satisfy needs that arise from development on the land, but only if the land is developed intensively for urban purposes.

The development does not rely upon any state public infrastructure such as regional roads, interchanges, regional open space etc

35 Public utility infrastructure

(1) Development consent must not be granted for development on land in an urban release area unless the consent authority is satisfied that any public utility infrastructure that is essential for the proposed development is available or that adequate arrangements have been made to make that infrastructure available when it is required.

All services and infrastructure are currently available to the site and as such it does not rely upon the provision of any new works to support the development proposal.

36 Development control plan

(1) The objective of this clause is to ensure that development on land in an urban release area occurs in a logical and cost-effective manner, in accordance with a staging plan and only after a development control plan that includes specific controls has been prepared for the land.

(2) Development consent must not be granted for development on land in an urban release area unless a development control plan that provides for the matters specified in subclause (3) has been prepared for the land.

Subclause (4) of this clause states that subclause (2) does not apply if:

(d) proposed development on land that is of a minor nature only, if the consent authority is of the opinion that the carrying out of the proposed development would be consistent with the objectives of the zone in which the land is situated.

The site is a single and isolated residential parcel of land with one dwelling entitlement. The proposed development seeks to provide ancillary works to an approved dwelling. It is therefore minor in nature and is also clearly consistent with the objectives of the zones as previously identified in this report.

6.2 THE PROVISIONS OF ANY DRAFT PLANNING INSTRUMENT

The Department of Planning & Environment have recently released a Draft SEPP (Environment) that seeks to protect and manage our natural environment. This Draft SEPP applies to the subject site.

However, the Draft SEPP does not necessarily seek to introduce new planning controls but rather simply seeks to consolidate several SEPP's including SREP 20 – Hawkesbury Nepean.

Accordingly, the development proposes no inconsistency with that Draft SEPP.

6.3 THE PROVISIONS OF ANY DEVELOPMENT CONTROL PLANS

PENRITH DCP 2014

PART C1 – SITE PLANNING AND ENVIRONMENTAL MANAGEMENT

All matters pertaining to site constraints, environmental planning matters have been addressed as part of previous sections of this report.

PART C5 – WASTE MANAGEMENT

A waste management plan has been prepared and accompanied the development application.

However, the development will result in limited waste streams through both the construction and operational phases.

PART D1 RURAL LAND USES

Note: The site is not zoned rural, however, regardless of the zoning, the site sits within a rural and landscape and as such it is considered that this is the most relevant section for assessment of the proposed development.

1.3 Farm Buildings

1.3.1 Siting and Orientation

B. Objectives

- a) To integrate farm buildings with the landscape so they complement the rural character of an area and are not visually dominant;***
- b) To ensure that farm buildings are located to have minimum adverse impact on the environment and on the potential use of the land for agriculture;***
- c) To provide separation between potential noise generating sources; and***
- d) To provide areas for landscaping between buildings.***

The proposed shed is located in the curtilage of the approved dwelling house which itself is located in an area of the site that is clear of any

significant constraint such as natural vegetation, watercourse or flooding.

The colocation of the built forms within the curtilage also mitigates any adverse visual impacts from having built forms sited close to Castlreagh Rd or sitting on top of the slope.

This area is also suitably removed from adjacent dwellings to ensure that no adverse amenity impacts arise.

1.3.2 Floor Space, Height and Design

B. Objectives

- a) To control the size and height of farm buildings to minimise their visual impact on the landscape;***
- b) To ensure that the size of farm buildings is consistent with the intended use and the size of the property;***
- c) To encourage improved design of farm buildings so they enhance the rural landscape and character of an area; and***
- d) To ensure that farm buildings use a range of design measures to suit individual circumstances.***

The proposed provides a simple but traditional design with a simple shallow sloped (10°) ridged roof and corrugated metal finish. An awning is provided to the northern elevation and provides some design articulation whilst the roller door openings are located on the eastern elevation, to limit any adverse visual impact from oped doors on the Castlreagh Rd view corridor.

The development provides a shed with a GFA of 216m² plus 72m² under awning are which provides a total area of 288m². This is a

relatively large shed but still well less than 400m² standard provided for under the DCP for lots with an area of above 3ha.

The shed is also consistent with the size and scale of numerous other similar type buildings that currently sit within the adjoining rural landscaped and its environs.

The shed also has a height of 5.258m to the ridge height, which is well less than the 8m maximum provided for by this section of the DCP.

1.3.3 Materials and Colours

B. Objectives

- a) To ensure that the colours used in the construction of farm buildings are consistent with the prevailing colours of the locality; and***
- b) To ensure that building materials used in farm building design reflect the rural setting and consist of traditional materials that are present in the locality.***

The proposed shed is to be clad with corrugated metal and finished with a dull green finish with roller door and gutter trim provided in contrasting tones.

These colours and materials will ensure the development is visually recessive within the rural landscape and therefore provides a suitable response for the local area and its environs.

6.4 IMPACTS OF DEVELOPMENT

6.4.1 NATURAL ENVIRONMENT

The site accommodates significant topographic features inclusive of flood prone lands, a watercourse, slopes, and limited native vegetation.

However, the development seeks to create an extended building platform and shed in an area located above that flood level.

No vegetation removal is required other than grasses.

Further, the development will drain stormwaters to the Penrith lakes Scheme, which has been designed to accommodate and manage stormwaters inclusive of water quality and quantity, from both the site and the surrounding area.

As a consequence, it can be ultimately concluded that the development will not cause adverse impact upon the natural environment.

6.4.2 BUILT ENVIRONMENT

The development provide a built form that presents as a typical rural type shed and therefore is consistent with the built landscaped character of the broader area.

6.4.3 SOCIAL IMPACT

The proposed development is not of a scale or type to cause any adverse social impact.

6.4.4 ECONOMIC IMPACT

The proposed development is not of a scale that will cause any economic impacts to the local or broader area.

6.5 SUITABILITY OF THE SITE

The subject site is appropriately zoned and has long been planned to provide future urban outcomes. The development will also cause no adverse impacts to the built or natural environment.

The subject site is therefore ideally suited to the proposed development.

6.6 THE PUBLIC INTEREST

The public interest is best served when the outcomes from development represents positive benefits as distinct from negative benefits.

The proposed development has no significantly adverse negative outcomes and hence the public interest is best served by approval of the development.

7.0 CONCLUSION

The application seeks approval to limited earthworks and a shed to be used as an ancillary element to the approved dwelling.

An assessment of the development has been made against the relevant provision of SEPP (Penrith Lakes Scheme) 1989 demonstrates that the development generally complies with all the identified planning objectives and development requirements.

For these reasons we can see good reason for Council to approve the development.

ANNEXURE A: COUNCIL FLOOD ADVICE



Our reference: ECM7003542
Contact: Ratnam Thilliyar
Telephone: 4732 7988

15 September 2015

Mr Vince Hardy
Cityscape
PO Box 127
GLENBROOK NSW 2773

Dear Mr Hardy

Flood Level Enquiry
Lot 1 DP 1181666 No. 259 West Wilchard Road Castlreagh

I refer to your Flood Information Application dated 3 September 2015, please find below the flood information for the above site.

The mainstream 1% AEP (*Annual Exceedance Probability – The chance of a flood of this size occurring in any one year*) flood level in the vicinity of the above property was previously estimated to be 20.6m AHD (*Australian Height Datum – A standard level datum used throughout Australia, approximately equivalent to mean sea level*) based on the information contained within the Nepean River RUBICON flood model (Water Board Study 1994). Please note however since 1994, the floodplain characteristics have changed and as such you should make your enquiries as to the present level of flooding relevant to this site.

The property is located in the close proximity of the Penrith Lakes Scheme and hence the flood behaviour (including the flood levels) in the vicinity of the subject site is predominantly influenced by the Lakes Scheme design. Accordingly, Council is aware that the Department of Planning are considering substantial amendment to the previously approved Penrith Lakes Scheme. Until such time as this is resolved, Council is not in a position to confirm the flood information relevant to your land.

I would also like to inform you that Council is currently reviewing this flood information and is subject to change.

Should you require any further information please do not hesitate to contact me on 4732 7988.

Yours sincerely

Ratnam Thilliyar
Engineering Stormwater Co-ordinator

Penrith City Council
PO Box 60, Penrith
NSW 2751 Australia
T 4732 7777
F 4732 7958
penrithcity.nsw.gov.au

ANNEXURE B: AHIMS SEARCH



**AHIMS Web Services (AWS)
Search Result**

Purchase Order/Reference : west wilchard

Client Service ID : 222499

Vince Hardy
16 Alexandra Cres
GLENBROOK New South Wales 2773
Attention: Vince Hardy
Email: vhardy@cityscape.net.au

Date: 26 April 2016

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 1, DP:DP1181666 with a Buffer of 50 meters, conducted by Vince Hardy on 26 April 2016.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location.*

ANNEXURE C: BMT FLOOD ADVICE



BMT Eastern Australia Pty Ltd
Suite G2, 13-15 Smail Street
Ultimo, Sydney, NSW, 2007
Australia
PO Box 1181, Broadway NSW 2007

Our Ref: JDE: L.N20917.009.00.docx

Tel: +61 2 8960 7755
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19 October 2018

ABN 54 010 830 421

www.bmt.org

CityScape Planning + Projects
PO Box 127
Glenbrook
NSW 2773

Attention: Vince Hardy

Dear Vince

RE: ADDENDUM TO FLOOD IMPACT OF PROPOSED DEVELOPMENT AT CORNER OF CASTLEREAGH ROAD AND WILCHARDS ROAD

BMT was previously engaged by Penrith Lakes Development Corporation (PLDC) to provide a letter report detailing the flood impact associated with a proposed landform at the corner of Castlereagh Road and WilcharDS Road, as detailed in L.N20917.001.00.pdf dated 28 August 2017.

The client now plans to extend on the development configuration previously assessed in L.N20917.001.00.pdf with the addition of a shed on a raised fill platform as shown in 36363 PAD DESIGN 18-10-16.pdf provided by PLDC. This letter report forms an addendum to L.N20917.001.00.pdf and provides additional commentary addressing flood impacts associated with the addition of the proposed shed on a raised fill platform.

As detailed in L.N20917.001.00.pdf, the proposed landform was incorporated into the TUFLOW model to enable comparison to the baseline flood condition. The modelling demonstrated that the proposed landform had negligible impact on 1% AEP peak flood levels. Based on the findings and conclusions of the TUFLOW modelling previously undertaken for the site, no further modelling was deemed necessary to assess the addition of the proposed shed and fill platform.

Similar to the impact of the wider site landform, the proposed shed and fill platform will have negligible impact on 1% AEP peak flood levels. The negligible impact can be attributed to a combination of the proposed shed and fill platform being located on the fringe of the 1% AEP flood extent, and the portion of available 1% AEP flood storage volume removed by the proposed fill platform being negligible when compared to the available storage across the wider Penrith Lakes system (as shown in Figure 3 in L.N20917.001.00.pdf).

The Flood Planning Level (FPL) for the site under the SEPP (Penrith Lakes Scheme) 1989, based on the TUFLOW 1% AEP peak flood level with an allowance of 1 m of freeboard, is 21.8 m AHD. The proposed finished floor level for the proposed shed, as shown in 36363 PAD DESIGN 18-10-16.pdf, is 21.8 m AHD (i.e. equivalent to the FPL).

We trust the above provides a suitable description of the impact of the proposed shed and fill platform. Please feel free to contact the undersigned to discuss further as required.

Yours Faithfully
BMT

A handwritten signature in black ink, appearing to read 'J. Eggleton'.

Joshua Eggleton
Senior Environmental Engineer

References

BMT WBM (2015) *Penrith Lakes Scheme Summary Flood Impact Report*. Prepared for Penrith Lakes Development Corporation.

Our Ref: JDE: L.N20917.001.00.docx

14 September 2017

CityScape Planning + Projects
PO Box 127
Glenbrook
NSW 2773

Attention: Vince Hardy

Dear Vince

RE: FLOOD IMPACT OF PROPOSED DEVELOPMENT AT CORNER OF CASTLEREAGH ROAD AND WILCHARDS ROAD

BMT WBM was requested by Penrith Lakes Development Corporation (PLDC) to provide a letter report detailing the flood impact associated with a proposed landform at the corner of Castlereagh Road and Wilchards Road.

Background

The site is situated in the most northern peripheral allotment of the Penrith Lakes Development area (PLDA). The PLDA is located to the north of Penrith CBD, adjacent to the eastern bank of the Nepean River. The PLDA covers a total area of some 19 km² and is bounded by the Nepean River to the west and south, Smith Road in the north and the Castlereagh escarpment to the east.

On behalf of PLDC, BMT WBM have previously developed a TUFLOW hydraulic model of the PLDA. The TUFLOW model was developed using primarily the same data sets which were used to develop earlier SOBEK and RMA models covering the PLDA.

The TUFLOW model represents the Water Management Plan WMP 2012 scheme with some subsequent modifications to site design configuration, as outlined in the Penrith Lakes Scheme Summary Flood Impact Report (BMT WBM, 2015). This model configuration has been adopted as the baseline condition to assess the impacts of the proposed landform on peak 1% AEP flood levels. Based on the baseline model configuration, the 1% AEP peak flood level in the vicinity of the proposed landform is 20.8 m AHD. This level is ~0.2 m above the Nepean River RUBICON flood model, as defined in Penrith City Council's Flood Level Enquiry letter for the development site (Ref. ECM7003542).

As stated in the State Environmental Planning Policy (SEPP) (Penrith Lakes Scheme) Amendment 2017, the flood planning level (FPL) for the Penrith Lakes Scheme is defined as the 1% AEP flood level plus one metre of freeboard. Based on the TUFLOW 1% AEP peak flood level of 20.8 m AHD, the FPL for the site is 21.8 m AHD.

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Proposed Development Flood Impacts

BMT WBM was provided with the proposed landform, as detailed in 6_20150907_JWP_West Wilchard 2yr plan dtm.dwg. This landform was not previously included in the TUFLOW model. As such, to assess the impact of the proposed earthworks, the proposed landform was incorporated into the TUFLOW model to enable comparison to the baseline flood condition. The change in surface elevation between the baseline and post-landform condition is shown in Figure 1. The proposed landform generally comprises an increase in surface elevation across the site.

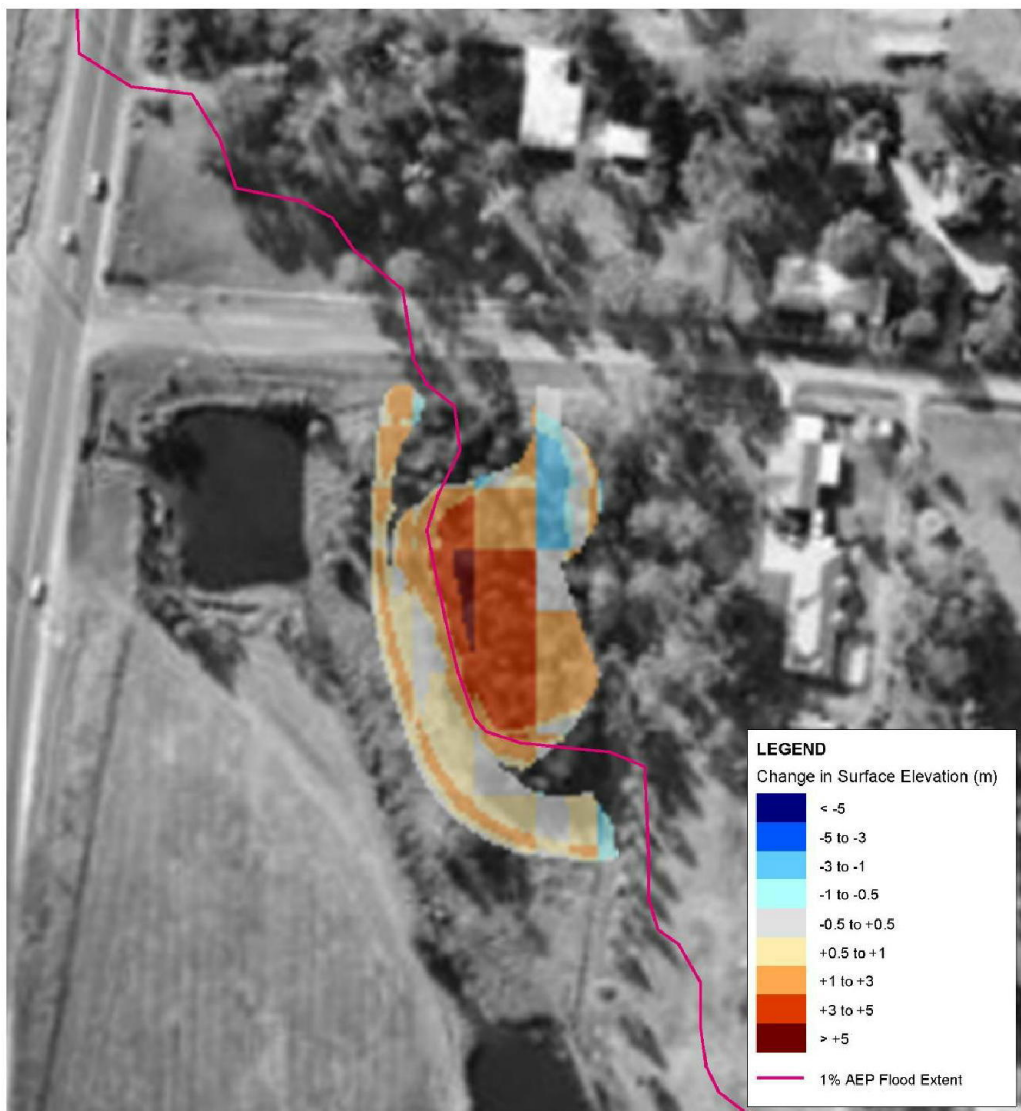


Figure 1 Change in Surface Elevation

The relative impact of the proposed development on baseline flood levels is presented in Figure 2 and Figure 3, which shows the change in peak flood level for the 1% AEP design event from baseline conditions to post-landform conditions. It is evident that the proposed landform has negligible impact on 1% AEP peak flood levels. The negligible impact can be attributed to a combination of the landform being located on the fringe of the 1% AEP flood extent, and the portion of available 1% AEP flood storage volume removed by the proposed landform being negligible when compared to the available storage across the wider Penrith Lakes system (as shown in Figure 3).

As previously stated, the FPL for the site, based on the TUFLOW 1% AEP peak flood level, is 21.8 m AHD. As the finished landform has a top of pad level of ~22.65 m AHD, any development to be constructed on the proposed landform will sit above the required FPL.

We trust the above provides a suitable description of the existing flood behaviour at the site and the impact of the proposed landform. Please feel free to contact the undersigned to discuss further as required.

Yours Faithfully
BMT WBM

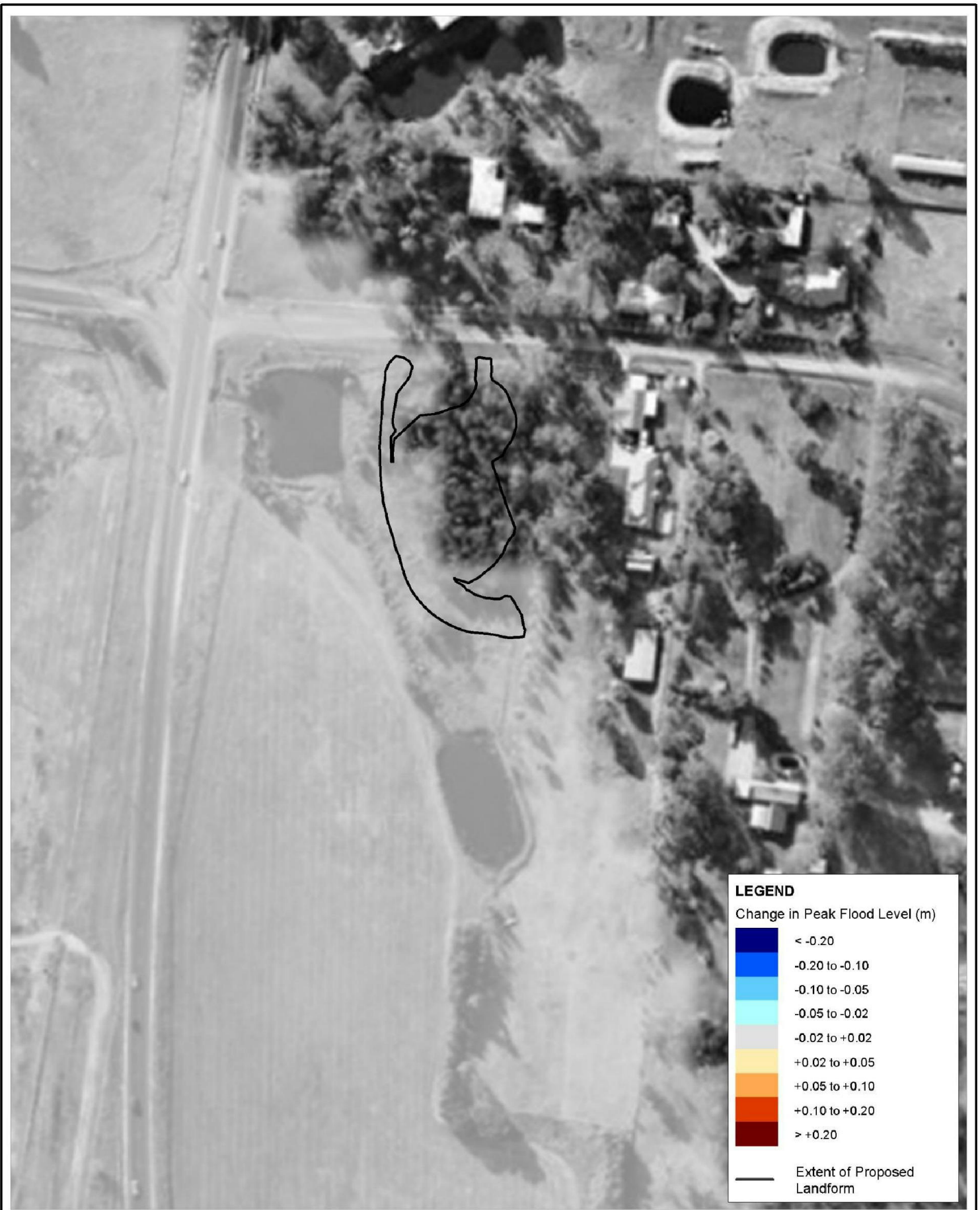


Joshua Eggleton
Environmental Engineer










References

BMT WBM (2015) *Penrith Lakes Scheme Summary Flood Impact Report*. Prepared for Penrith Lakes Development Corporation.

State Environmental Planning Policy (SEPP) (Penrith Lakes Scheme) Amendment 2017



LEGEND
 Change in Peak Flood Level (m)

	< -0.20
	-0.20 to -0.10
	-0.10 to -0.05
	-0.05 to -0.02
	-0.02 to +0.02
	+0.02 to +0.05
	+0.05 to +0.10
	+0.10 to +0.20
	> +0.20

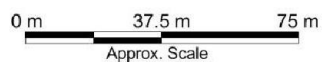
— Extent of Proposed Landform

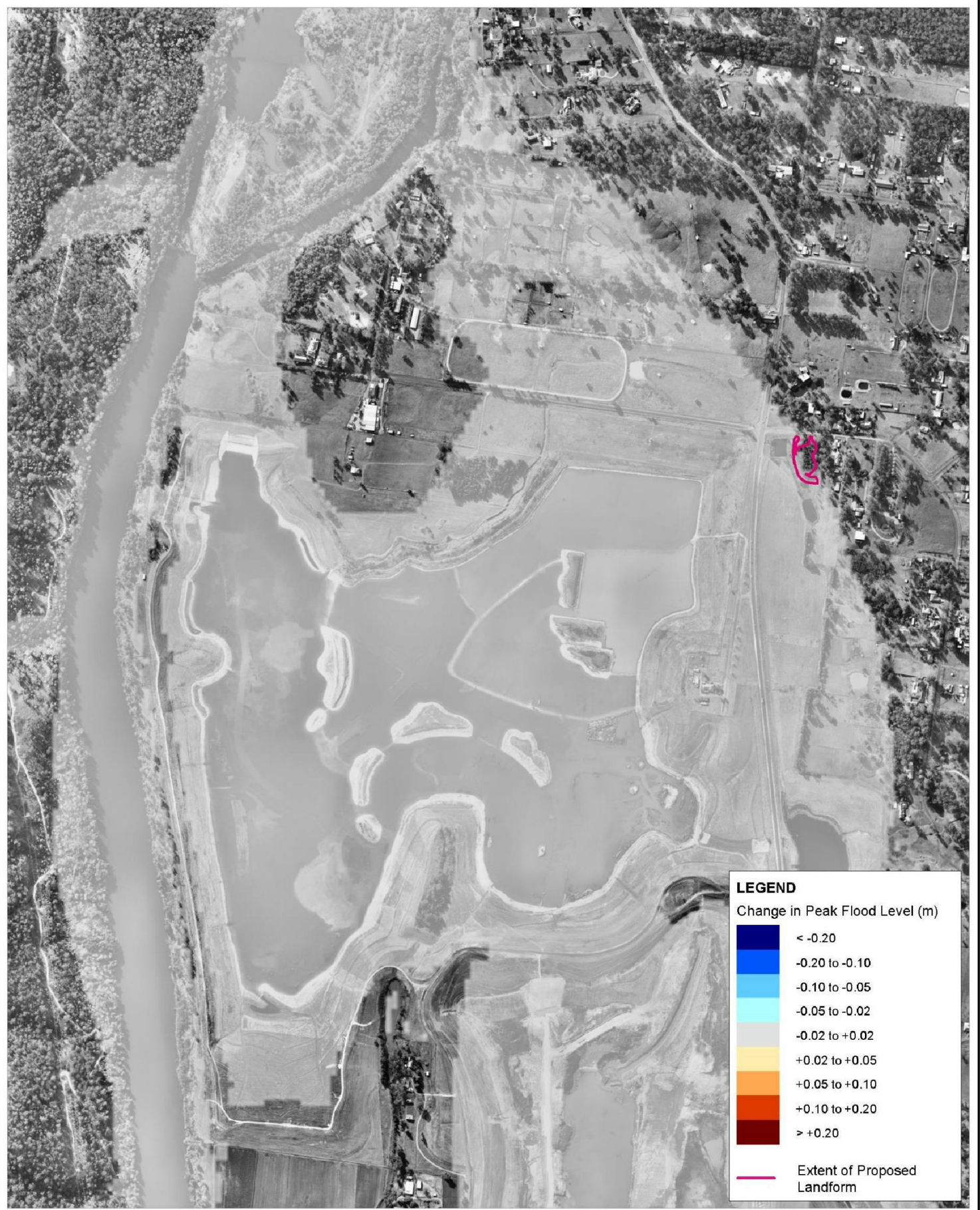
Title:
1% AEP Change in Peak Flood Level

Figure:
2

Rev:
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







BMT WBM endeavours to ensure that the information provided in this map is correct at the time of publication. BMT WBM does not warrant, guarantee or make representations regarding the currency and accuracy of information contained in this map.






LEGEND

Change in Peak Flood Level (m)

	< -0.20
	-0.20 to -0.10
	-0.10 to -0.05
	-0.05 to -0.02
	-0.02 to +0.02
	+0.02 to +0.05
	+0.05 to +0.10
	+0.10 to +0.20
	> +0.20

 Extent of Proposed Landform

Title:
1% AEP Change in Peak Flood Level

Figure:
3

Rev:
A

BMT WBM endeavours to ensure that the information provided in this map is correct at the time of publication. BMT WBM does not warrant, guarantee or make representations regarding the currency and accuracy of information contained in this map.



0 200 400m
 Approx. Scale



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