

Planning Proposal

Community Infrastructure Incentives in Wickham



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Community Infrastructure Incentives in Wickham

Introduction

City of Newcastle (CN) has prepared this planning proposal to establish a transparent and equitable means of facilitating increased density in Wickham. The planning proposal seeks to provide incentives to development to deliver the urban renewal outcomes identified in the *Wickham Masterplan 2021 (July 2022)* (WMP 2021), including improved connectivity and amenity of the public domain.

The proposed amendments to *Newcastle Local Environmental Plan 2012* (NLEP 2012) provide the mechanisms necessary to implement CN's *Community Infrastructure Incentives Policy* on land identified suitable for supporting increased density. Once implemented, the proposed amendments will facilitate urban renewal initiatives that deliver safe, vibrant, and connected places where people will want to visit, live and work into the future.

This planning proposal has been prepared in accordance with Section 3.33 of the *Environmental Planning and Assessment Act 1979*. It explains the intended effect of the proposed Local Environmental Plan (LEP) amendment and sets out the justification for making the plan.

The Department of Planning and Environment's *Local Environmental Plan Making Guideline* (September 2022) has guided and informed the preparation of this planning proposal. The planning proposal may evolve over time due to various reasons, such as feedback during exhibition. It will be updated at key stages in the plan making process.

Summary of proposal

The *Newcastle Local Strategic Planning Statement* (LSPS) 2020 identifies that Newcastle Local Government Area (LGA) has limited remaining sites available for greenfield development, hence future demands for housing and jobs will rely on growth through infill redevelopment. To ensure this is achieved in the most efficient and effective way, Planning Priority 8 of the Local Strategic Planning Statement (LSPS) advocates for CN to “*Plan for growth and change in Catalyst Areas, Strategic Centres, Urban Renewal Corridors and Housing Release Areas*”. The rationale for this approach is that this will improve infrastructure and land use sequencing to capitalise on the opportunities for jobs and housing growth.

CN proposes to apply incentives within the existing planning framework by delivery of the following mechanisms:

1. The *Community Infrastructure Incentives Policy* that identifies CN's intention to enhance the delivery of community infrastructure to support urban renewal in the City of Newcastle (CN) through the provision of development incentives.
2. Provision of a new clause and mapping in NLEP 2012, described further in this planning proposal, that identifies the land in Wickham that is applicable for community infrastructure incentives and the maximum incentive that may be provided on the land.
3. *Draft Wickham Community Infrastructure Plan* that identifies the community infrastructure projects, the method for determining the value of these, and the method for determining the appropriate level of incentive based on the value of the community infrastructure.
4. New provisions relating to community infrastructure in Section 6.03 Wickham of NDCP 2012

The amendments to NLEP 2012 will expedite the delivery of community infrastructure complementary to traditional funding sources, while incentivising development that promotes urban renewal and delivers new housing and floorspace for business in a transit-oriented location.

Land at 41 and 47 Throsby Street, Wickham was subject to a separate planning proposal ([PP-2021-328](#)) that was finalised by the Department of Planning and Environment (DPE) on 1 July 2022. The planning proposal sought to:

- Increase the maximum HOB on part 41 Throsby Street from 10m to 14m
- Increase the maximum HOB on 47 Throsby Street and part 41 Throsby Street from 10m to 28m
- Increase the maximum FSR across the site from 1.5:1 to 3:1

Given that this LEP amendment has been finalised by DPE, CN has removed 41 and 47 Throsby Street, Wickham from this planning proposal.

Background

On 15 December 2010, part of Wickham was included within the [Newcastle Potential Precinct Map](#) under then *State Environmental Planning Policy (Urban Renewal) 2010* in order to facilitate the orderly and economic development and redevelopment of sites in and around urban renewal precincts. To initiate urban renewal, the NSW State Government prepared the *Newcastle Urban Renewal Strategy* (NURS) which aimed to make the Newcastle city centre a vibrant and innovative regional hub and an attractive and viable destination for business, residents and visitors. The NURS identified the need for further planning and urban design guidance within the Wickham area to facilitate the transformation from a post-industrial suburb to an urban village that facilitates a mix of uses and densities.

Council adopted the *Wickham Masterplan 2017* (WMP 2017) on 28 October 2017, following extensive engagement with stakeholders to identify a vision for the desired future character of Wickham, as well as outlining the strategies and actions to achieve the vision. The WMP 2017 provided strategic guidance for CN's planning decisions and coordinated delivery of urban renewal within Wickham.

In order to ensure fairness and equity among landholdings and not unduly impose a burden on land identified for community infrastructure, the WMP 2017 advocated for an incentives approach on sites with capacity to support a variation to development standards, by enabling increased gross floor area (GFA) where development delivers identified community infrastructure.

On 27 July 2021 Council adopted the *Community Infrastructure Incentives Policy* that identified the approach CN would take to deliver urban renewal through development incentives mechanisms with its LEP.

To deliver the redevelopment opportunities within Wickham and deliver the community infrastructure identified within WMP 2017, Council adopted the *Wickham Masterplan 2021 Update* (WMP 2021) in September 2021. WMP 2021 provides further guidance on the land suitable to achieve a development incentive and identifies the community infrastructure projects to be delivered through redevelopment.

Council adopted the WMP 2021 (2022 Amendment) in July 2022. This amendment included minor changes to the areas proposed for incentive heights and FSRs. The changes ensure a better built form outcome and a more gradual transition between the higher-density built form of the Emerging Industry Quarter Urban Precinct and the lower-scale Village Hub Urban Precinct.

This planning proposal has been amended to reflect the updated mapping in the most current WMP 2021 (July 2022). It is noted that the changes also applied to 41 and 47 Throsby Street, which has been removed from the planning proposal.

Applicable land

The Wickham area is shown in context to the Newcastle City Centre within Figure 1:

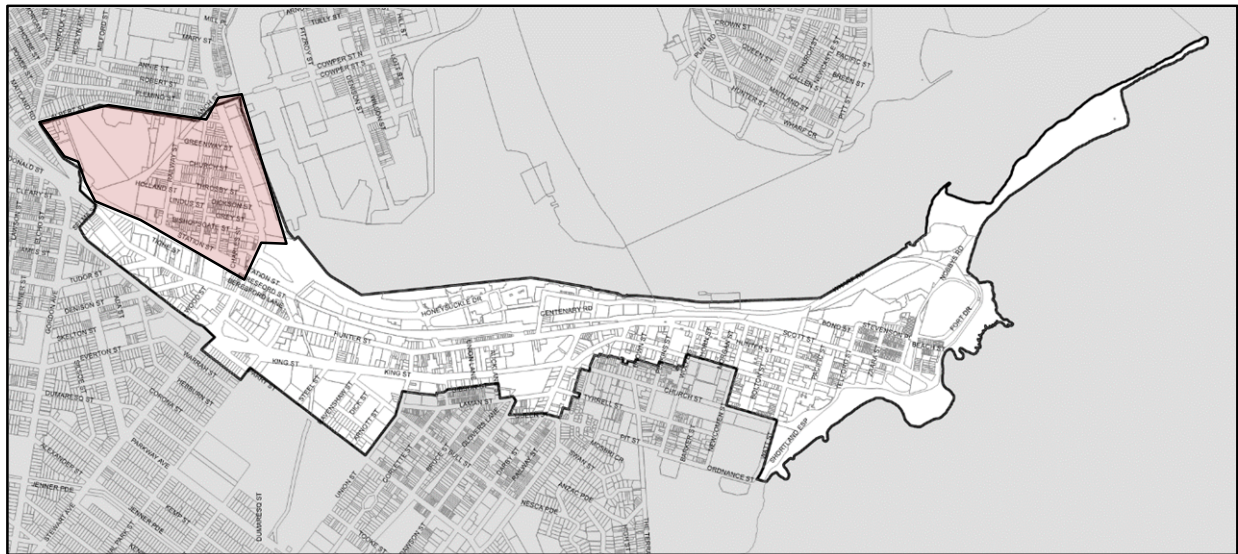


Figure 1 – Local context of Wickham Masterplan Area.

The proposal comprises amendments to Newcastle LEP 2012 on land identified in Figure 2:

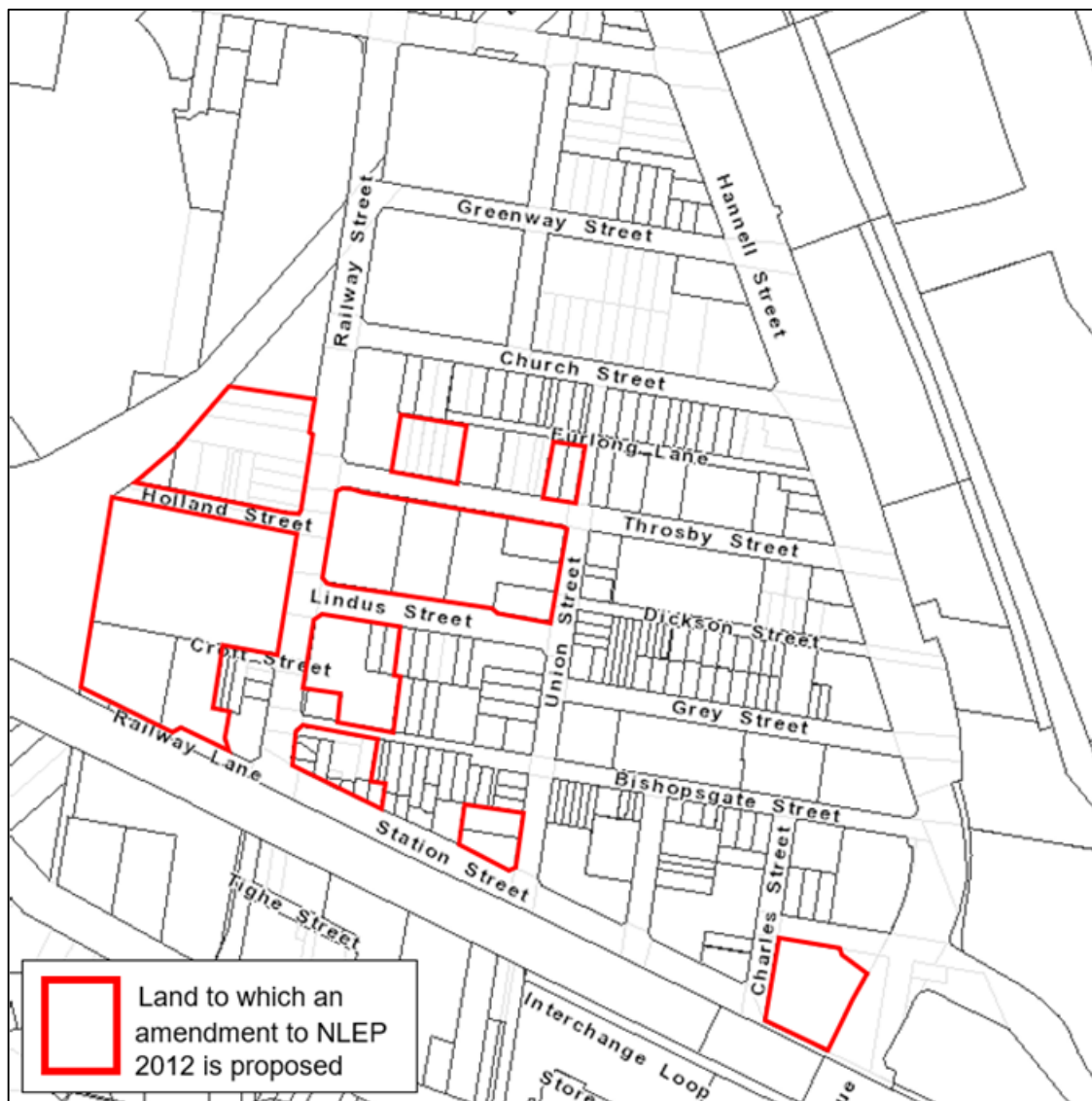


Figure 2 – Applicable Land

Part 1 - Objectives or intended outcomes

The intended outcome of this planning proposal is to facilitate urban renewal in Wickham by:

1. Utilising the existing GFA derived from the development standards applying on land dedicated to CN, to be utilised in the development of the residual land.
2. Enabling an incentive increase in density to development, consistent with WMP 2021 (July 2022), where:
 - a. Development involves the timely delivery of identified community infrastructure projects
 - b. The incentive to development correlates to the quantifiable value that the community infrastructure represents to CN
3. Remedying an existing anomaly within Part 7 Additional local provisions – Newcastle City Centre of *Newcastle Local Environmental Plan 2012*.

Part 2 - Explanation of provisions

The proposed outcomes will be achieved by:

1. Introducing a new Clause 7.11 *Community infrastructure height of buildings and floor space at Wickham* in the NLEP 2012:

Clause 7.11 Community infrastructure height of buildings and floor space at Wickham

- (1) *The objectives of this clause are as follows—*
- (a) *to allow greater building heights and densities in Wickham where community infrastructure is also provided,*
 - (b) *to ensure that such greater heights and densities reflect the desired character of the localities in which they are allowed and minimum adverse impacts on the amenity of those localities,*
 - (c) *to provide for an intensity of development that is commensurate with the capacity of existing and planned infrastructure.*
- (2) *Despite clauses 4.3 and 4.4, the consent authority may consent to development on a site that results in additional building height or additional floor space, or both, in accordance with subclause (4) if the development includes community infrastructure on the site.*
- (3) *In deciding whether to grant development consent, the consent authority must—*
- (a) *be satisfied that the development is consistent with the objectives of this clause, and*
 - (b) *be satisfied that the community infrastructure is reasonably necessary in Wickham, and*
 - (c) *take into account the nature of the community infrastructure and its value to the Wickham community.*
- (4) *Under subclause (2), a building on land in any of the areas identified on—*
- (a) *the [Height of Buildings Map](#)—is eligible for an amount of additional building height determined by the consent authority but no more than that identified in the table:*

Column 1	Column 2	Column 3	Column 4
<i>Land identified on HOB map as:</i>	<i>Where maximum HOB is shown on map as:</i>	<i>With site area equal or greater than:</i>	<i>The incentive HOB is a maximum of:</i>
Area A	24m	2,000 m ² 2,500 m ²	35m 45m
Area B	10m 10m or 14m 10m, 14m or 24m	1,000 1,500 m ² 2,000 m ²	14m 24m 35m
Area C	10m	1,000 m ²	14m
Area D	10m 10m	1000 m ² 2000 m ²	14m 24m
Area E	45m	1,000 m ²	60m

- (b) the [Floor Space Ratio Map](#)—is eligible for an amount of additional floor space determined by the consent authority but no more than that identified in the table:

Column 1 Land identified on FSR map as:	Column 2 Where maximum FSR is shown on map as:	Column 3 With site area equal or greater than:	Column 4 The incentive FSR is a maximum of:
Area B	1.5 1.5	1,500 m ² 2,000 m ²	2 2.5
Area C	1.5	1,000 m ²	2
Area D	1.5 1.5	1,000 m ² 2,000 m ²	2 3
Area E	6	1,000m ²	7

- (5) In this clause—

community infrastructure means development for the purposes of community facilities, recreation areas, recreation facilities (outdoor), public roads or drainage.

Note: Clause 7.11 is not a development standard that is subject to variation via a clause 4.6 request.

2. Repealing current Clause 7.9 Height of buildings

The new clause 7.11 is supported by the *Draft Wickham Community Infrastructure Plan* and draft DCP provisions.

Part 3 – Justification

Section A - Need for the planning proposal

1. *Is the planning proposal a result of any strategic study or report?*

Wickham Master Plan 2017

The *Wickham Master Plan 2017* (WMP 2017) was prepared as a recommendation of the NSW Government's *Newcastle Urban Renewal Strategy* which identified Wickham as an area requiring further planning to inform future redevelopment decisions.

WMP 2017 identified strategies and actions to implement three key objectives:

1. Improve accessibility and connectivity within Wickham and to adjoining areas
2. Create safe, attractive, and inclusive public places
3. Ensure built environment is functional, responsive, and resilient

The WMP 2017 vision identified six interconnecting character precincts. The intent of the precincts is to determine the envisaged character for different parts of Wickham based on their location, physical attributes of the built environment, redevelopment opportunity and density.

The WMP 2017 also includes strategies and actions for achieving provision of community infrastructure through developer incentives (including an increase in development standards within in NLEP 2012) where development provides for improvements to connectivity and the public domain, in addition to what may achieved through CN's contributions framework

Community Infrastructure Incentives Policy

Council adopted the *Community Infrastructure Incentives Policy* at the 27 July 2021 meeting. The purpose of the policy is to outline the approach and mechanisms to enhance the delivery of community infrastructure through the provision of development incentives. It delivers a transparent, equitable and evidence-based approach based on community engagement to do so.

The intent of the planning proposal is to implement the Community Infrastructure Incentives Policy in Wickham in the select areas identified in the *Wickham Masterplan 2021*.

Wickham Masterplan 2021

The *Wickham Masterplan 2021 Update* (WMP 2021) provides further strategic guidance for CN's planning decisions and coordinated delivery of urban renewal within Wickham. The WMP 2021 was first adopted by Council on 28 September 2021.

This planning proposal is prepared in response to the WMP 2021 which identified areas suitable for increased densities (via incentive increases in HOB and FSR) where this delivers identified community infrastructure projects.

CN made minor amendments to the WMP 2021 in July 2022. The planning proposal has been updated to reflect the mapping in WMP 2021 (July 2022) and this is the version that the planning proposal seeks to implement.

Newcastle Housing Needs and Local Character Evidence Report

The *Newcastle Housing Needs and Local Character Evidence Report* (2019) identified Maryville-Wickham as an area likely to experience the third highest rate of population growth in Newcastle LGA, with a projected population growth of 2,650 by 2041. This report also identified the Maryville-Wickham area as experiencing significantly more residential development than

previous forecasts had expected, with a development rate 38% higher than was forecast between 2016-2018. A market opportunity for student housing was also identified, with an unmet demand for student housing within City Centre suburbs including Wickham, coinciding with substantial investment by University of Newcastle in the city centre campus. A key factor in meeting this demand is identified as the provision of better cycling networks linked to education centres.

2. *Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?*

CN contends that the provision of an incentive mechanism provides greater certainty to both the community and the development industry of the potential community infrastructure that may be delivered where applicants seek to achieve increased density within their development application. This approach is favoured over the alternative piecemeal approach of preparing individual planning proposals and planning agreements for each remaining potential redevelopment parcel within Wickham.

The removal of *Clause 7.9 Height of buildings* has no material effect but ensures that NLEP 2012 does not contain obsolete provisions that are unnecessary and confusing to users. The HOB maps were amended to remove Area A on the 29 July 2014 under the *State Environmental Planning Policy Amendment (Newcastle City Centre) 2014*, however, the amendment failed to repeal the clause from the instrument. Specific upper-level setbacks and street wall design controls were previously included in the city centre development controls introduced by the NSW government following endorsement of the NURS.

Clause 7.9 is an anomaly and CN seeks to remedy this by repealing it as part of this planning proposal.

Section B - Relationship to strategic planning framework

3. *Is the planning proposal consistent with the objectives and actions of the applicable regional, sub-regional or district plan or strategy (including any exhibited draft plans or strategies)?*

Hunter Regional Plan 2041

The *Hunter Regional Plan 2041* (HRP 2041) guides the land use planning for the Hunter region over the next 20 years. The plan identifies opportunities for sustainable growth, infrastructure, resilience, equity and provides the framework for an infrastructure-first place-based approach. The plan includes overarching objectives, strategies, planning priorities, significant growth areas and place strategy outcomes for the districts in the Hunter region. The planning proposal is consistent with the following objectives and strategies identified in the HRP 2041:

Objective 3 – Create 15-minute neighbourhoods to support mixed, multi-modal, inclusive and vibrant communities.

- **Strategy 3.5** - The planning proposal is consistent with this strategy as it aims to facilitate increased density for housing and employment, through provision of incentives to development that deliver the urban renewal outcomes identified in the WMP 2021, including improved connectivity and amenity of the public domain.

Objective 4 – An inter-connected and globally-focused Hunter without car dependent communities.

- **Strategy 4.2** – The planning proposal is consistent with this strategy as it seeks improved connectivity and amenity of the public domain within Wickham.

Objective 5 – Plan for ‘nimble neighbourhoods’, diverse housing and sequenced development.

- **Strategy 5.2** - This planning proposal is consistent with this strategy as it aims to facilitate increased density for housing and employment through the provision of incentives to development that deliver the urban renewal outcomes identified in the WMP.

Planning Priority 2 - Reinforce revitalisation of Newcastle City Centre and expand transformation along the waterside.

- The planning proposal is consistent with this planning priority as it aims to facilitate increased density, through provision of incentives to development around Newcastle Interchange that deliver the urban renewal outcomes identified in the WMP.

Greater Newcastle Metropolitan Plan 2036

NSW Department of Planning and Environment's (DPE) *Greater Newcastle Metropolitan Plan 2036* (GNMP 2036) recognises the Newcastle city centre and Wickham as the heart of Greater Newcastle, set to benefit from both public and private investment and planning through Revitalising Newcastle and the Urban Transformation and Transport Program to enhance the City Centre's appeal.

The GNMP 2036 recognises the importance of collaborative partnerships in optimising opportunities for transformation and driving the emergence of Greater Newcastle as a metropolitan city on the global stage. Further to this, the GNMP 2036 acknowledges the importance of continued revitalisation, improved transport connectivity, and high-quality buildings and places to attract new small business start-ups.

The GNMP 2036 provides specific directions for the 'Wickham Precinct', within the Newcastle City Centre Catalyst Area, which aligns with the planning proposal area and sets out the following:

"Newcastle City Council will align local plans to:

- *facilitate the long-term expansion of the City Centre towards Wickham*
- *increase opportunities for transit oriented development around Newcastle Interchange*
- *respond to development constraints including mine subsidence and flooding*
- *provide floor space for emerging new economy industries and businesses."*

The planning proposal is consistent with the GNMP 2036 in that it:

- Seeks to facilitate and incentivise redevelopment to support and complement the emerging city centre
- Supports mixed use development around the Newcastle interchange
- Addresses flooding through recognition of floor height controls affecting HOB
- Acknowledges mine subsidence risk through consultation with Subsidence Advisory NSW in developing the WMP
- Ensuring sufficient FSR to ensure feasibility of mixed use development and new economy industries and businesses such as *High Technology Industry*.

4. *Is the planning proposal consistent with a council's local strategy or other local strategic plan?*

Newcastle 2040 Community Strategic Plan

The *Newcastle 2040 Community Strategic Plan* (CSP) identifies the community's vision for the city and informs the strategies, policies, and actions for CN to achieve this vision. The planning proposal is consistent with the following priorities and objectives in the CSP:

- **Liveable:**
 - 1.1 Enriched neighbourhoods and places
 - 1.3 Safe, active and linked movement across the city
- **Achieving Together:**
 - 4.1 Inclusive and integrated planning
 - 4.3 Collaborative and innovative approach

Newcastle Local Strategic Planning Statement

The *Newcastle Local Strategic Planning Statement* (LSPS) was adopted by CN in May 2020. The LSPS is a 20-year land use vision prepared to guide the future growth and development in Newcastle consistent with the GNMP 2036. It informs changes to the NLEP 2012, NDCP 2012 and other land use strategies.

The LSPS advocates for redevelopment in Wickham as part of the Newcastle City Centre Catalyst Area. This planning proposal supports an increase in provision of housing and jobs close to public transport and supports urban renewal and delivers on the following relevant planning priorities:

- Plan for growth and change in Catalyst Areas, Strategic Centres, Urban Renewal Corridors and Housing Release Areas
- Sustainable, healthy and inclusive streets, neighbourhoods and local centres
- Development responds to the desired local character of our communities
- Enable the transition to new economy job and grow creative industries

Newcastle Local Housing Strategy

The *Newcastle Local Housing Strategy* (LHS) was adopted by Council in October 2020 and sets a framework for the provision of housing across CN over the next 20 years. The LHS is a local response to the housing actions within the HRP 2041, GNMP 2036 and LSPS. The LHS is accompanied by an Implementation Plan.

This planning proposal is consistent with the delivery of the following strategic priorities:

- Maintain and encourage housing supply in the right locations
- Diversify housing type and tenure across the LGA to provide for a range of housing needs
- Increase the availability of accessible and adaptable housing
- Increase the supply of affordable rental housing
- Ensure new housing and changes to existing housing reflect the desired future local character of the area

5. Is the planning proposal consistent with applicable State Environmental Planning Policies (SEPPs)?

An assessment of the planning proposal (PP) against the relevant State Environmental Planning Policies (SEPPs) is provided in the table below.

Table 1 – Relevant State Environmental Planning Policies (SEPPs)

Relevant SEPP	Applicable	Consistency and Implications
SEPP (Biodiversity and Conservation) 2021	Yes	Whilst this SEPP applies to the land, there is no potential for koala habitat within the vicinity of the PP area hence the requirements of this SEPP are not applicable.
SEPP (Building Sustainability Index: BASIX) 2004	N/A	
SEPP 65 (Design Quality of Residential Flat Development)	Yes	Wickham is zoned B4 Mixed Use (to become MU1 Mixed Use from 26 April 2023) which permits land subject to the PP to be developed for uses to which this SEPP applies (residential apartment development). CN is satisfied that the planning controls proposed will enable development that is compliant with this SEPP and associated apartment design guidelines. CN has sought advice the advice of its design review panel under clause 27(c) of this SEPP. The panel raised no objection to this proposal. Any subsequent development application utilising the incentive HOB and FSR under Clause 7.11 will be referred to the Panel at the DA stage.
SEPP (Housing) 2021	Yes	<i>SEPP (Housing) 2021</i> applies to the PP area given it is zoned B4 Mixed Use. The proposed planning controls will not hinder the application of this SEPP.
SEPP (Exempt and Complying Development Codes) 2008	N/A	
SEPP (Industry and Employment 2021)	N/A	
SEPP (Planning Systems) 2021	N/A	
SEPP (Precincts – Eastern Harbour City) 2021	N/A	
SEPP (Precincts – Central River City) 2021	N/A	
SEPP (Precincts – Western Parkland City) 2021	N/A	
SEPP (Primary Production) 2021	N/A	
SEPP (Resilience and Hazards) 2021	Yes	<i>SEPP (Resilience and Hazards) 2021</i> applies to the PP area. Most of the PP area is situated within the Coastal Environment Area. CN is satisfied that the proposed LEP amendments will not result in subsequent development proposals being inconsistent with the aims of this policy, or the controls under Division 3 Coastal

Relevant SEPP	Applicable	Consistency and Implications
		environment area, Division 4 Coastal use area, and Division 5 General.
SEPP (Resources and Energy) 2021	N/A	
SEPP (Transport and Infrastructure) 2021	N/A	
SEPP (Sustainable Buildings) 2022	N/A	

6. Is the planning proposal consistent with applicable Ministerial Directions (s.9.1 directions)?

An assessment of the planning proposal (PP) against the relevant Ministerial Directions is provided in the table below.

Table 2: Review of relevant Ministerial Directions (Section 9.1 directions)

Relevant Section 9.1 Direction	Applicable	Consistency and implications
Focus area 1: Planning Systems		
1.1 Implementation of Regional Plans	Yes	The PP is consistent with HRP 2041 as outlined above.
1.2 Development of Aboriginal Land Council land	N/A	
1.3 Approval and Referral Requirements	Yes	The PP does not include any provisions that will require subsequent development applications to seek approval or referral from any other public authority. CN will consult with public authorities prior to public exhibition in accordance with any conditions included in the Gateway determination.
1.4 Site Specific Provisions	N/A	
Focus Area 1: Planning Systems – Place-based		
N/A		
Focus Area 2: Design and Place		
[This Focus Area was blank when the Directions were made]		
Focus Area 3: Biodiversity and Conservation		
N/A		
Focus Area 4: Resilience and Hazards		
4.1 Flooding	Yes	CN has prepared a Flood Assessment Report to support the PP. It notes minor inconsistencies with this Ministerial Direction but concludes that the PP is manageable within the current flood management framework and any inconsistencies are minor in nature. The Flood Assessment Report is provided at Appendix A.
4.2 Coastal Management	Yes	Consistent. The PP area is within the coastal zone as defined under the <i>Coastal Management Act 2016</i> . Notwithstanding, the PP is consistent with this direction.
4.3 Planning for Bushfire Protection	N/A	
4.4 Remediation of Contaminated Land	Yes	Consistent. This direction applies as it is possible that development for a purpose referred to in Table 1 of the contaminated land planning guidelines may have been carried out on land covered by this PP. No changes are proposed to current zoning of land or permissibility of uses are proposed as part of this PP. As such, CN has not sought to obtain a preliminary investigation in accordance with the contaminated land planning guidelines.
4.5 Acid Sulfate Soils	Yes	Consistent. The land is located within Category 3 on the ASS map in NLEP 2012. However, the PP does not include

		provisions or amendments that will increase the risk or hazard from the current potential, hence it is considered to be of minor significance and does not require any further study.
4.6 Mine Subsidence and Unstable Land	Yes	Consistent. Part of the PP area is within a proclaimed Mine Subsidence District. Subsidence Advisory NSW (SA NSW) were consulted in the preparation and exhibition of WMP 2017 to consider if the subject area could support a greater level of development than is currently permitted. SA NSW did not raise any objection to an increase in the scale of built form but confirmed that any future development would trigger the need for further investigation which is likely to result in the need for remediation/ stabilisation works. The areas subject to development incentives were revised as part of WMP 2021. This is to reflect updated information provided by Subsidence Advisory NSW (SA NSW) on the current development potential of sites affected by mines subsidence.
Focus Area 5: Transport and Infrastructure		
5.1 Integrating Land Use and Transport	Yes	Consistent. The PP facilitates additional GFA for business and residential development through the offering of development incentives. The land subject to this PP is within the Newcastle City Centre Area boundary and hence is consistent with the aims, objectives and principles of: (a) <i>Improving Transport Choice – Guidelines for planning and development</i> (DUAP 2001), and (b) <i>The Right Place for Business and Services – Planning Policy</i> (DUAP 2001).
5.2 Reserving Land for Public Purposes	N/A	
5.3 Development Near Regulated Airports and Defence Airfields	N/A	
5.4 Shooting Ranges	N/A	
Focus Area 6: Housing		
6.1 Residential Zones	Yes	Consistent. This direction applies to the PP as the B4 Mixed Use zone permits residential development. The PP will not reduce the permissibility of residential uses but rather increase their feasibility due to a potential increase in FSR and HOB.
6.2 Caravan Parks and Manufactured Home Estates	N/A	
Focus Area 7: Industry and Employment		
7.1 Business and Industrial Zones	Yes	Consistent. The PP not only retains the existing opportunities for business uses within the B4 Mixed Use zone but seeks to expand this by offering an incentive increase in HOB and FSR, allowing a greater potential floor space for permitted uses including business uses.
7.2 Reductions in Non-Hosted Short-Term Rental Accommodation Period	N/A	
7.3 Commercial and Retail Development along the Pacific Highway, North Coast	N/A	
Focus Area 8: Resources and Energy		
8.1 Mining, Petroleum Production and Extractive Industries	N/A	
Focus Area 9: Primary Production		
N/A		

Section C - Environmental, social and economic impact

7. *Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?*

The land subject to the planning proposal does not contain critical habitat or threatened species, populations or ecological community, or their habitats.

8. *Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?*

Traffic and Transport Considerations

Local traffic and transport

The increased densities proposed in the planning proposal are a direct reflection of the higher densities identified in the WMP. The WMP 2017 was adopted concurrently with the *Wickham Local Area Traffic Management Plan* (LATMP) to ensure traffic management measures and interventions are implemented based on traffic thresholds set by Transport for NSW to improve safety and amenity of local streets. Community infrastructure facilitated by this planning proposal will assist with providing land identified for local roads (i.e. identified intersection works, road widening, providing new connections and enabling public domain improvements) in the LATMP. This will allow widening of the road reserve in select streets to enable adequate capacity of traffic, parking and the establishment of new footpaths and shared paths.

Public transport

This planning proposal recognises the strategic location of Wickham, its proximity to the emerging Newcastle CBD in Newcastle West and the Newcastle Transport Interchange. This location creates potential for the area to accommodate increased densities to capitalise on Wickham's proximity to excellent public transport options. This is strongly supported by the strategic framework for the Hunter region, by enhancing the public domain and relevant services to make it easier to get around the city centre, recognising Wickham as the public transport gateway into the city centre.

Cycle and pedestrian movement

Community infrastructure facilitated by this proposal will include the establishment of new footpaths and shared paths throughout Wickham and linking to adjoining areas, in accordance with the vision of the WMP and the revised *Newcastle Cycling Strategy and Action Plan*. These interventions are expected to encourage uptake of active transport planning, by contributing key components at the hub of a city-wide network of footpaths and separated cycleways.

Environmental Considerations

Bushfire hazard

The land is not identified as bush fire-prone land in the Newcastle Bush Fire Hazard Map (2018).

Noise impact

This proposal will allow the continued development of a mix of compatible permissible land uses, with noise impacts anticipated to be adequately addressed during the design and assessment of individual developments.

Flooding

CN has prepared a Flood Assessment Report to support the planning proposal. The Flood Assessment report found that the planning proposal achieves the intent of Ministerial Direction 4.1 Flooding and is consistent with the NLEP 2012 and NDCP 2012 provisions in regard to flooding.

The Flood Assessment Report is available at Appendix A.

Sea level rise

Resilience to potential hazards from sea level rise is being addressed at a broader scale through CN's *Strategic Position for the Management of Low-Lying Areas of Newcastle – Wickham-Maryville-Carrington-Islington* (2017), which supports the ongoing redevelopment of these areas combined with various mitigation measures. In the case of this planning proposal, suitable mitigation measures have been considered, such as raising the ground level floor heights for new development. This additional height (up to 1m) above natural ground level has been considered in determining the maximum HOBs to ensure no further variation under clause 4.6 of NLEP 2012 are required (in relation to this issue) in any subsequent DA on land subject to this planning proposal.

Urban Design Considerations

The maximum proposed increase in density (HOB and/or FSR) is consistent with the urban design assessment and 3D modelling provided as part of WMP 2017.

However, the incentives proposed are dependent on site area, which responds to concern raised by CN's Urban Design Review Panel with how development standards are applied across the Newcastle City Centre, when large, tall development occurs on narrow lots with minimal side setbacks and reduced building separation. This delivers a dense urban form that is atypical of Newcastle's context. The site areas and predetermined densities will ensure resultant development in Wickham is able to comply with the requirements of the Apartment Design Guideline (ADG) and Section 6.03 Wickham of NDCP 2012, including setbacks, opportunities for landscaping, and car parking requirements, while also providing an incentive for site amalgamation.

CN has estimated that the hypothetical additional GFA from development accessing the available incentive GFA per Clause 7.11 of the NLEP 2012 to be around 28,000 square meters, not taking into consideration additional incentive GFA being made available from amalgamation of sites.

Assuming that additional GFA is taken up as additional residential apartments (at an average GFA of 90 sqm per dwelling), this could create an additional 311 dwellings in Wickham. In doing so, this additional development will enable the delivery of the community infrastructure projects not otherwise achievable by CN and at no additional cost to development under the current development standards.

Social and Cultural Considerations

9. *Has the planning proposal adequately addressed any social and economic effects?*

Open space management

The planning proposal facilitates various interventions within the urban structure that will deliver the community's desire for increasing opportunities for 'greening' and open space within the public domain.

Social and cultural impacts

The improved community infrastructure facilitated by this proposal will cater for the social and recreational needs of both local residents and the wider Newcastle community. The Wickham area will continue to cater for sporting, community events, and festivals, which will benefit from improved pedestrian and cycle links to public transport and adjoining areas.

Economic impact assessment

The 'Incentive GFA Rate', proposed for Wickham by CN (based on the dividing the total cost of nominated community infrastructure projects by the maximum potential incentive GFA available, consistent with the WMP 2021), was reviewed on behalf of CN by economic and valuation consultancy HillPDA.

HillPDA tested the potential development scenarios using a feasibility modelling approach to ensure that the potential rate is not only feasible but represents an incentive to development,

based on a positive result to the potential rate of return. HillPDA identified a potential range for the 'Incentive GFA Rate', based on the variation in individual site factors and likely building types resulting from the range of incentive densities tested.

CN has determined a rate that represents the middle to upper end of the identified range but that would deliver all of the community infrastructure projects identified within WMP 2021 to support the increased densities.

This rate is contained within the *Draft Wickham Community Infrastructure Plan* that will be exhibited together with this planning proposal.

Employment Land

This planning proposal will increase the development potential of land currently zoned B4 Mixed Use, furthering the objectives of this key area of employment land, in particular: *To integrate suitable business, office, residential, retail and other development in accessible locations so as to maximise public transport patronage and encourage walking and cycling.*

Section D - State and Commonwealth interests

10. Is there adequate public infrastructure for the planning proposal?

New development contributes toward the provision of essential community infrastructure, as a condition of consent being applied under Section 7.11 or 7.12 of the EP&A Act, however in areas of rapid growth local government is limited by:

- the amount able to be charged in comparison to the full cost of providing the infrastructure and services required by the community
- the type of items that may be funded by contributions in comparison to the expanded range of facilities and services local government is responsible for providing
- the timeframe to collect or recoup adequate funds necessary for delivering community infrastructure.

This planning proposal seeks to implement an additional means of delivering community infrastructure, through development incentives, that are complementary but completely independent to contributions made under Section 7.11 and 7.12 of the Act.

Applicants may access the available incentives, consistent with Clause 7.11 of NLEP 2012 and the HOB and FSR maps, when a DA is accompanied by a Planning Agreement that identifies the delivery of community infrastructure to support urban renewal in Wickham.

11. What are the views of state and Commonwealth public authorities consulted in accordance with the Gateway determination?

CN will consult with Transport for NSW, Biodiversity Conservation Division and Subsidence Advisory NSW in accordance with the Gateway Determination.

CN has consulted with Subsidence Advisory NSW and the DPE in the preparation of this planning proposal and the Community Infrastructure Incentives Policy.

Part 4 – Mapping

The planning proposal seeks to amend the following maps within Newcastle LEP 2012:

- Height of Buildings Map
- Floor Space Ratio Map

The Matrix below indicates which map sheets are to be amended as a result of this planning proposal:

	FSR	LAP	LZN	WRA	ASS	HOB	LSZ	LRA	CL1	HER	URA
001											
001A											
001B											
001C											
001D											
002											
002A											
002B											
002C											
002D											
002E											
002F											
002G											
002H											
003											
004											
004A											
004B											
004C											
004D											
004E											
004F											
004FA	X					X					
004G	X					X					
004H											
004I											
004J											
004K											

Map Codes:	FSR	=	Floor Space Ratio map
	LAP	=	Land Application Map
	LZN	=	Land Zoning Map
	WRA	=	Wickham Redevelopment Area Map
	ASS	=	Acid Sulfate Soils Map
	HOB	=	Height of Buildings Map
	LSZ	=	Lot Size Map
	LRA	=	Land Reservation Acquisition Map
	CL1	=	Key Sites Map & Newcastle City Centre Map
	HER	=	Heritage Map
	URA	=	Urban Release Area Map

Figure 3: Existing Height of Buildings Map

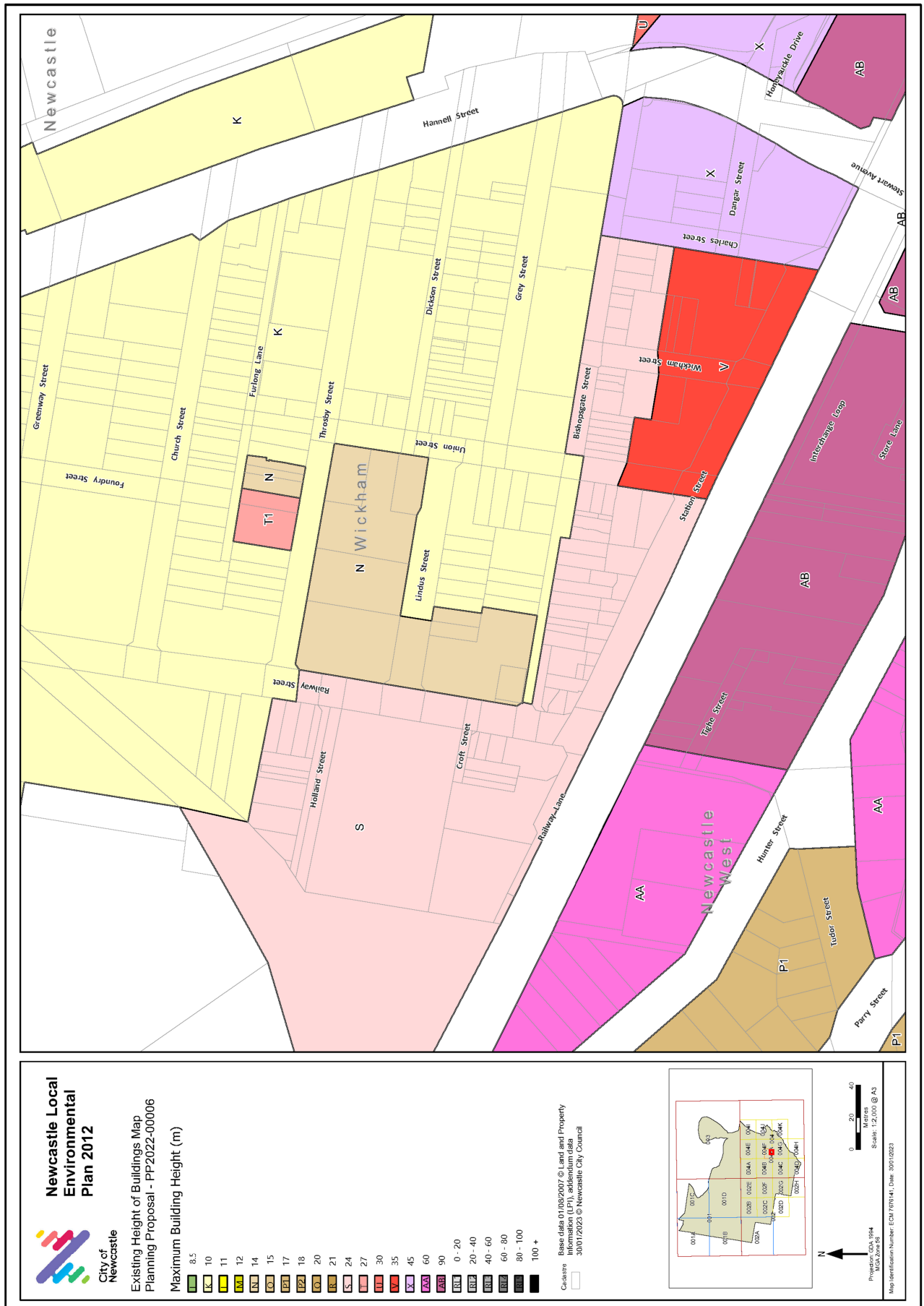


Figure 4: Proposed Height of Buildings Map

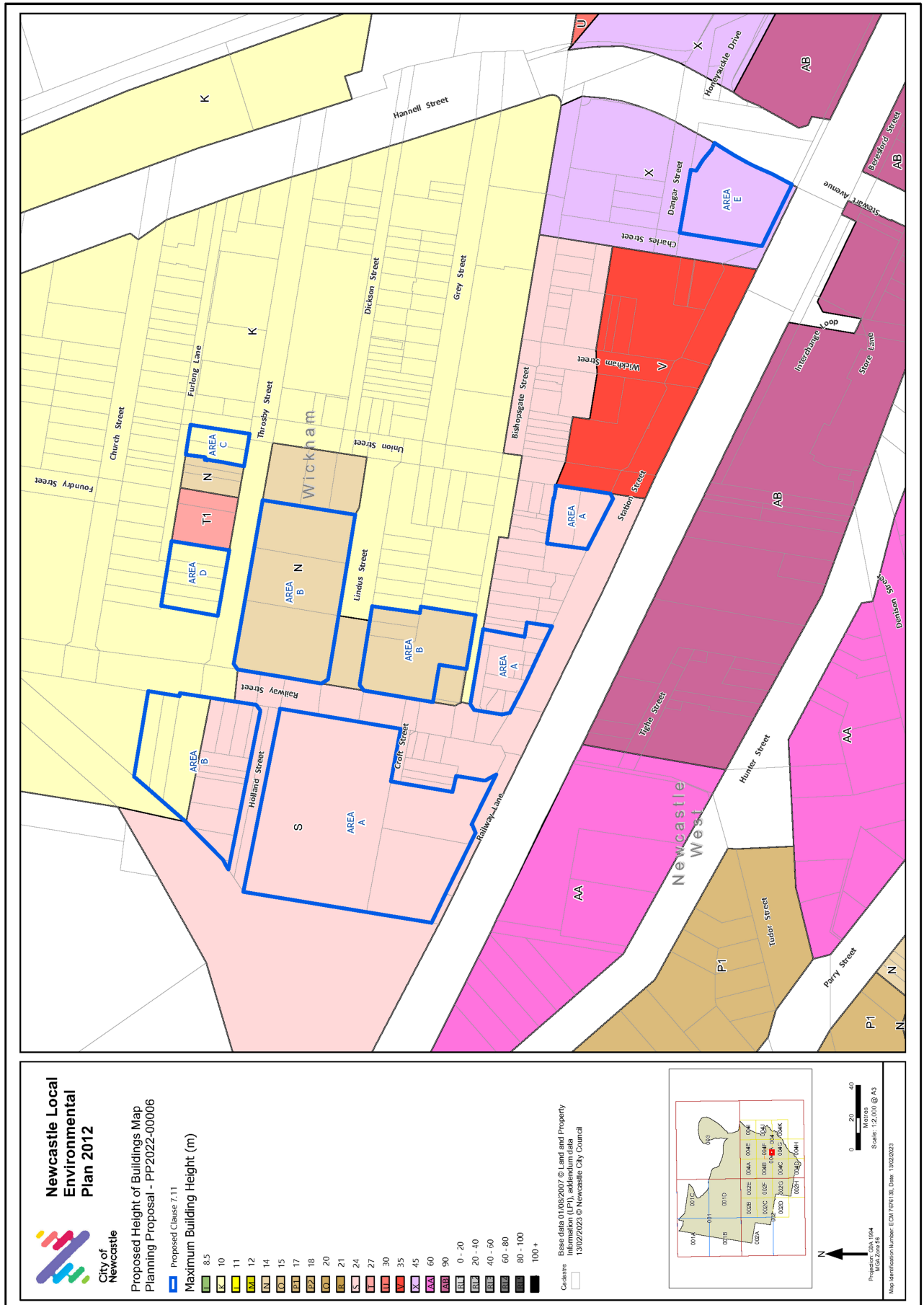


Figure 5: Existing Floor Space Ratio Map

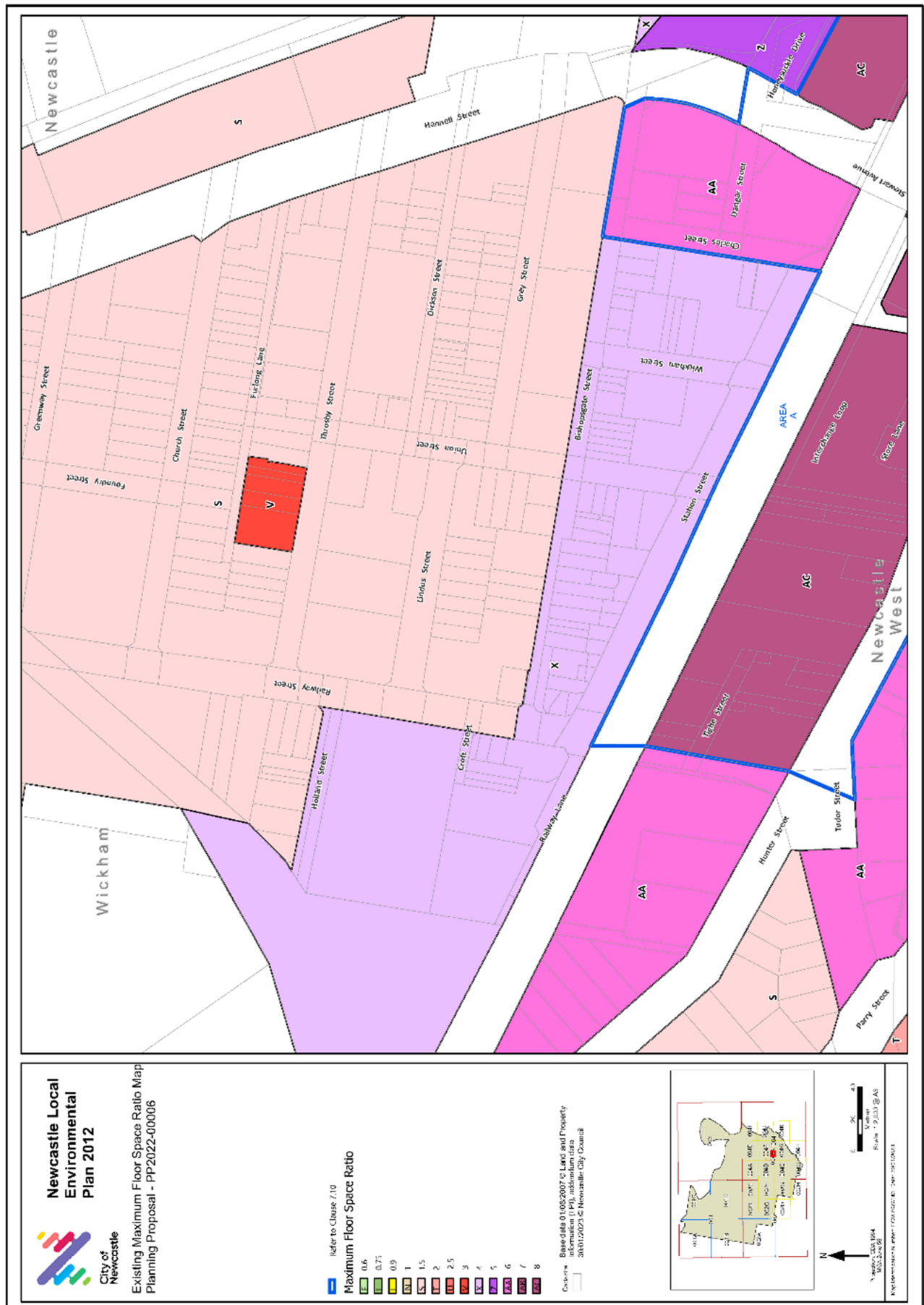
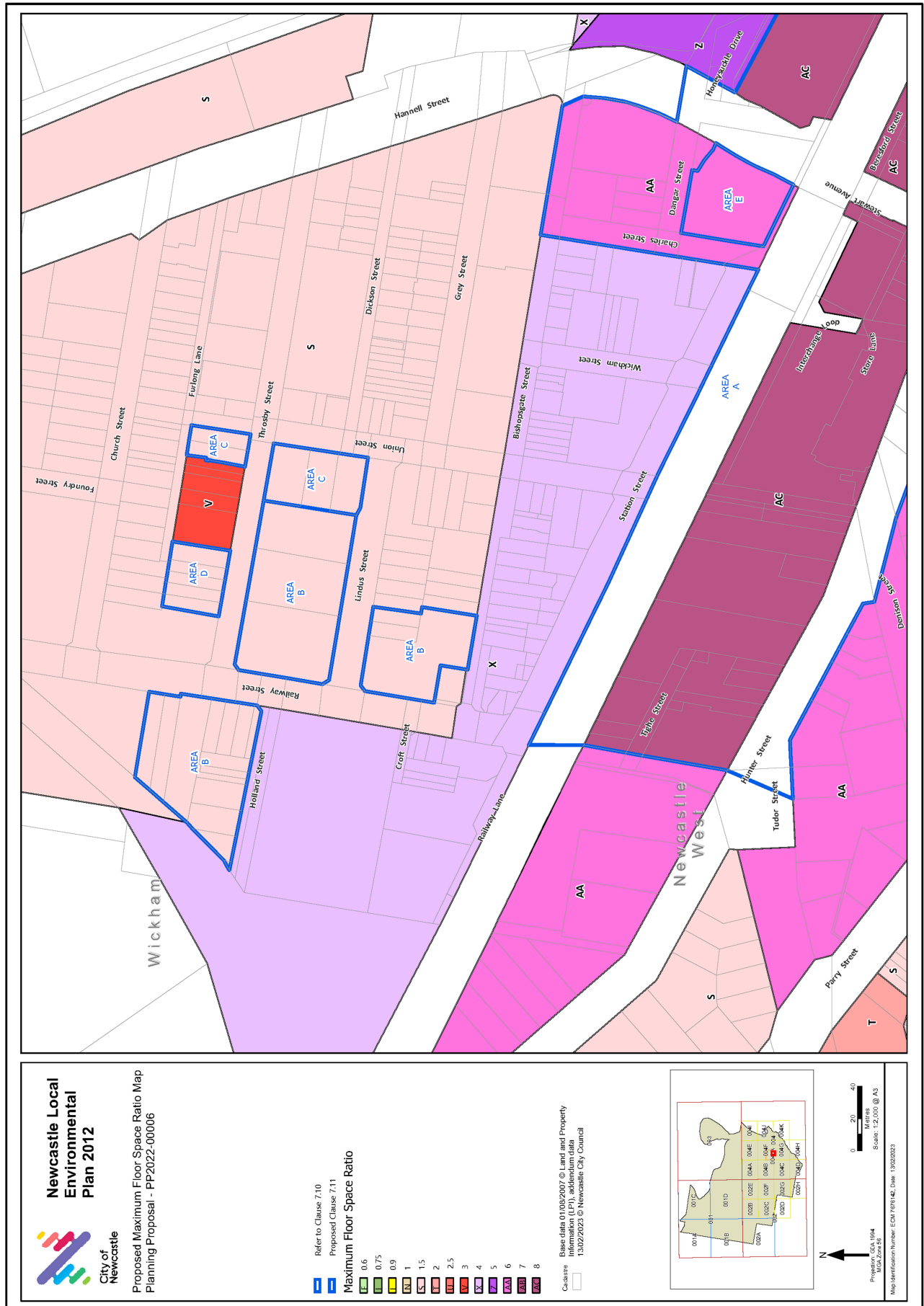


Figure 6: Proposed Floor Space Ratio Map



Part 5 – Community consultation

Per the Gateway Determination, the planning proposal is categorised as principal as described in the *Local Environmental Plan Making Guideline* (September 2022) and must be made publicly available for a minimum of 30 days.

The planning proposal will be exhibited together with the Draft Wickham Community Infrastructure Plan and Draft Section 6.03 Wickham DCP.

Per the Gateway Determination, CN will consult with:

- Transport for New South Wales
- Biodiversity Conservation Division
- Subsidence Advisory NSW

CN has engaged with the local Wickham community, landowners and industry stakeholders on the proposed community infrastructure incentives, as follows:

- Pre-engagement on the WMP 2021 in December 2020 and January 2021, which outlined the proposed incentives and the community infrastructure projects.
- 28-day public exhibition of the draft Community Infrastructure Incentives Policy, which outlined the proposed approach.
- 28-day public exhibition of the draft WMP 2021 which detailed the development incentives and envisaged community infrastructure envisaged for Wickham.
- 28 day public exhibition of the draft WMP 2021 (2022 Amendment) which proposed minor changes to the areas proposed for development incentives.

Part 6 – Project timeline

The PP timeline is shown below. It has been updated to be consistent with the Gateway Determination received 4 November 2022.

	Nov 2022	Dec 22	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sep 23	Oct 23	Nov 2023
Gateway Determination received	4 Nov 2022												
PP amended to reflect Gateway Determination													
Public exhibition and agency consultation				Public exhibition (30 days)									
Consideration of submissions and reporting													
Anticipated report back to Council for adoption								27 June 2023					
PP forwarded to DPE													
PP finalised by DPE													
Local Environmental Plan made													By 4 Nov 2023

Appendix 1 – Flood Assessment Report

WICKHAM PLANNING PROPOSAL

Flood Assessment Report



Version 2
08 February 2023

For Enquiries, please call City of Newcastle on Ph: 02 4974 2000

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Part A – Flood Impact Assessment Report

1.0 Introduction

The City of Newcastle (CN) has prepared this flood impact review report to support the planning proposal for the Community Infrastructure Incentives at Wickham. This report forms part of the planning proposal submission by CN.

The planning proposal has been prepared to facilitate an increase in development scale and density for housing and employment purposes, by offering the provision of incentives to developments that could deliver the urban renewal outcomes as identified in the Wickham Masterplan (WMP) 2021.

2.0 Planning Proposal & Flood Assessment Summary

The planning proposal covers multiple potential development sites in Wickham. These subject sites have been identified in Image 1 - Applicable Land and each identified site is noted in Table 1.

These parcels of land are specified within the Wickham Masterplan 2017 development area and are identified as catalyst sites for multi-unit high rise developments. The planning proposal itself will increase allowable building heights and density within the identified sites.

For the purposes of this report and in addressing the set flooding management requirements, it is understood that the planning proposal will allow for increased building height and density of future developments at the identified sites. Its objectives also clearly state that future development building footprints have been established over the identified parcels of land (Applicable Land) under the Wickham Masterplan (WMP) 2021, thus CN can conclusively state that this planning proposal does not alter the flooding behaviors on the ground areas nor significantly affects any of the surrounding properties.

Fundamentally, CN recognizes that the potential flood risks from this planning proposal are a result of an increased number of dwellings (residential units or any other form of development) with an increase in density and height. This generally foresees an increase in expected population in the area.

Based on the above, this flood impact assessment will review the following aspects of the flood management for the planning proposal:

- identify the flood regime on the planning proposal sites and discuss the suitability of future developments including setting minimum flood planning level (FPL)
- identify property and life risks for the proposed future development
- outline an appropriate flood emergency response for the proposed development
- determine if any adverse impacts arise from the planning proposal
- Address flooding elements of the Ministerial Direction 4.1 Flooding
- Address the Newcastle LEP aspects on flooding and Newcastle DCP 4.01

Image 1 – Applicable Land (Planning Proposal Sites)

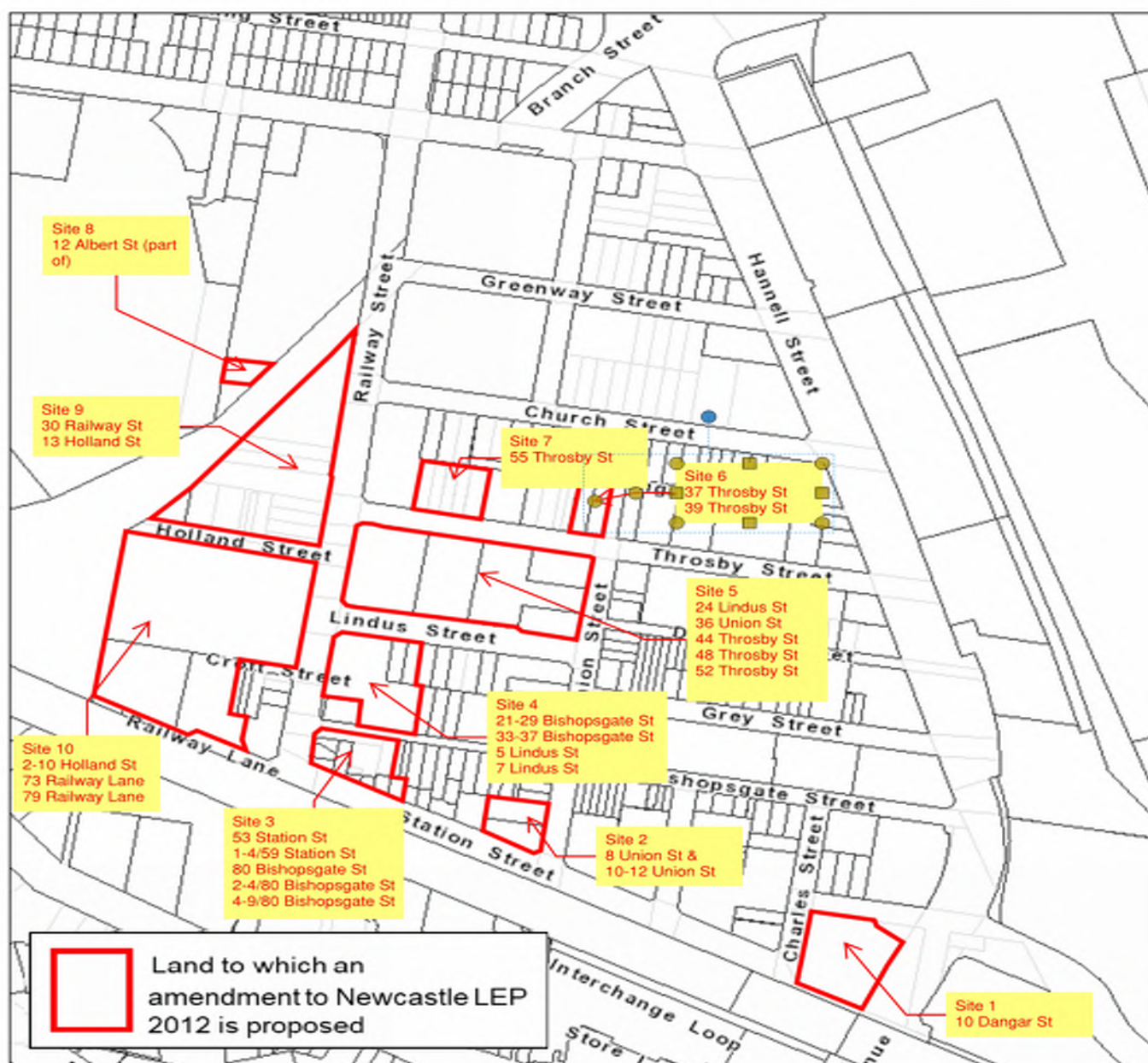


Table 1 – Site Locations and Addresses as per Image 1 above

Site No.	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10
1									
10 Dangar St	10-12 Union St	53 Station St	21-29 Bishopsgate St	24 Lindus St	37 Throsby St	55 Throsby St	12 Albert St (part of)	30 Railway St	2-10 Holland St
	8 Union St	1-4/59 Station St	33-37 Bishopsgate St	36 Union St	39 Throsby St			13 Holland St	73 Railway Lane
		80 Bishopsgate St	5 Lindus St	44 Throsby St					79 Railway Lane
		2-4/80 Bishopsgate St	7 Lindus St	48 Throsby St					
		4-9/80 Bishopsgate St		52 Throsby St					

3.0 Flood Catchment Area and Data Analysis

Wickham is located within the Cottage Creek catchment and the catchment area generally drains to the Throsby Basin in Newcastle Harbour. Cottage Creek catchment area is approx. 8 km² and is predominantly dominated by urbanised City type formation consisting of residential living and commercial operations.

City of Newcastle's adapted Newcastle City-Wide Floodplain Risks Management Study and Plan (NCWFRM) and City-Wide Mapping are both reasonably dated and used to define flood behaviour in the Cottage Creek catchment (BMT WBM 2012).

The Throsby, Cottage and CBD Flood Study and associated maps provide the hydraulic and hydrology flood analysis of the catchment area, this referenced technical document provides background flood analysis data in the NCWFRM and City-Wide Mapping.

Wickham Masterplan area is bounded by the adapted NCWFRM and City-Wide Flood Mapping. The flood mapping and data contained in the adapted reports and maps are current and applicable to the planning proposal development area and forms the main document basis of this flood impact assessment and management of flood risks. NCWFRM have been prepared in accordance with NSW Government's Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005.

The technical hydrology and hydraulic background flood studies leading to the adaptation of NCWFRM is available in CN's Website. CN has a dedicated section on our website for Flooding, which includes elements such as web links to SES, BOM and ABC Radio, information on flood alert service, an Interactive map, and other associated information.

CN also has a well-established process to attain Flood Information Certificates (FIC), which generally provides site specific flood data and recommends the FPL. The additional information provided with the FIC contains general information which can be easily understood by public (refer Appendix 2).

Various Web Links to CN Flooding page as below:

Link to CN main Flooding Web page is as follows:

<https://www.newcastle.nsw.gov.au/living/environment/flooding>

Link to CN's adapted NCWFRM to the document is as follows:

<https://newcastle.nsw.gov.au/Newcastle/media/Documents/environment/Flooding/R-N2246-001-03.pdf>

Link to CN City-Wide Mapping is as follows:

https://newcastle.nsw.gov.au/Newcastle/media/Documents/environment/Flooding/R-N2246-001-01-compendium_WEB.pdf

3.1 Flood Information Maps

For the purposes of this planning proposal, flood information maps and data have been extracted from CN's WaterRide database, rather than referring to the adapted City-Wide Flood Mapping. The main purpose and reason for using WaterRide data is that it provides more in-depth and detailed information in a higher resolution format for the Wickham areas.

The provided maps are to analysis the flood risk and analysis of the area and to demonstrate that the planning proposal is deemed to be within the framework and complies with principles set by CN and the adapted NCWFRM, while fulfilling the requirements as set under the ministerial direction.

For the purposes of the planning proposal, only the flood impact analysis data under the critical flood events, being the 1% AEP and PMF storm events, have been considered. The 1% AEP analysis has been used to

foresee the flood risk management aspects, setting the FPL and managing the risks to property, while the PMF analysis has been used to discuss the management of risk to life.

The following Flood Maps are provided in Appendix 1:

Flash (Local) Flooding

- PMF Flood Extent
- PMF Risk to Life
- 1% AEP Flood Extent and Level
- 1% AEP – Risk to Property
- 1% AEP – Flood Depth
- 1% AEP Flood Classification (BMT)
- PMF - Flood Classification
- 1% AEP Velocity Map
- PMF Velocity Map

Ocean Flooding

- PMF Flood Extent
- 1% AEP – Risk to Property
- 1% AEP – Flood Depth

4.0 Wickham Flood Physical Environment

4.1 Flash (Local) Flooding

Wickham is generally at the downstream end of the local catchment area and as such, flooding in the Cottage Creek catchment is generally affected by flash flood (local) flooding. With flash flooding, there is particularly very little warning and of concern is areas with high risk to life during extreme events. Majority of the planning proposal area is noted to rated L4 in extreme (PMF) event. Such an extreme flood event in local flood experience terms could be stated to being many times larger than the June 2007 (Pasha Bulker) event.

Majority part of Wickham consists of naturally localised lower areas (bowl-shaped), hence seemingly forming like a catchment basin, thus a large section of Wickham is classified as a flood storage area (See below snip of flood classification map). The remaining areas in Wickham are noted to be flood fringe.

Floodwaters in flash floods generally rising quickly and recede quickly to an extent, thus predominately forming the main form of flood risk, however in low lying areas (flood storage areas) such as Wickham, it is particularly difficult for this area to drain freely to the Harbour, meaning that flood waters fill-up and drain slowly to the Harbour.

Flood Storage Management

Wickham has an established stormwater drainage network of subsurface stormwater pipes that discharge to the Cottage Creek catchment. During major flash flood events, the conveyance capacity of the drainage network is exceeded resulting in the excess flow being conveyed as overland flow, particularly along the local streets. The flood storage areas, with typical blockages of the local stormwater drainage network could be impacted by some sustained extent of prolong inundation.

Other flood impacts such as blockages and tidal impacts also affects the performances of the drainage network.

A desktop analysis of Wickham indicates that majority of the identified sites has existing building. These existing warehouse type industrial buildings currently occupy the entire available land area. As part of the Wickham Masterplan, it is anticipated that the future developments (predicted to be dominated by residential type high-rise buildings) on these sites will predominantly have a lesser building footprint area on the ground level.

Majority of the high-rise buildings will have additional open landscaped areas, potential through site links, together a network of open spaces and new roads (as per Wickham Masterplan – See Image 2 below) will

free up additional area on the ground. Overall, CN's vision is that the future building designs will reduce the building footprint on the ground level areas when compared with the current situation, with further building setback from new roads and a streamlining of future lots, hence it is predicted that the future developments will pave way for provision of additional flood storage area.

Overall, it is predicted that there will be a net gain in flood storage area based on the Wickham Masterplan. The potential additional available flood storage area will further assist in storage of flood waters. In comparison with the current scenario, there is an overall net benefit in the management of flood storage area, when compared with than the current scenario.

Link to Wickham Masterplan below:

<https://www.newcastle.nsw.gov.au/Newcastle/media/Documents/Strategies,%20Plans%20and%20Policies/Plans/Wickham-Masterplan-2021-Update-Adopted-July-2022.pdf>

Image 2 – Snip of Map 6 from Wickham Masterplan indicating New Roads and Open Areas

Map 6 – Location of proposed community infrastructure projects



4.2 Climate Change

Climate change impacts is a key consideration for floodplain management and the NSW Floodplain Development Manual requires consideration of climate change.

Key elements of future climate change (e.g. sea level rise, rainfall intensity) are therefore important considerations in the ongoing floodplain risk management.

4.3 Ocean Flooding and Sea Level Rise

NSW Government incorporated consideration of potential climate change impacts (Ocean Flooding) into relevant planning instruments. CN's adapted NCWFRM have adequate available flood data for ocean flooding, which is based on the NSW Sea Level Rise Policy Statement (DECCW, 2009) and have pre-set guidelines in the to manage the flood risks and coastal hazard assessments in the LGA's low lying coastal areas for sea level rise.

Wickham area is also affected by ocean flooding and the flood data has been collaborated in Table 2 below. Generally, 2.2m AHD has been set as the 1% AEP ocean flood level and PMF Level is set at 3.4m AHD, both being based on the benchmarks as projected rise in sea level, relative to the 1990 mean sea level, of 0.4 metres by 2050 and 0.9 metres by 2100.

The overall risk to life (PMF event) for ocean flooding is generally consistent over the LGA and is noted to be low risk at L1. The risk to property seems to vary over the Wickham planning proposal area and is rated between P1 and P3 and therefore being generally low risk. Storage

4.4 Potential Increase in Rainfall Intensity

CN's adapted NCWFRM has considered the potential impacts from climate change and associated sea level rise and extreme weather events and have planned for these potential possible future changes probability for overall LGA.

The pre-anticipated predicted impact from climate change on rainfall conditions seems to be that the predicted average rainfall could potentially increase, resulting in the changes in annual rainfall conditions. Although it is assumed that this factor is unlikely to have a significant on impact on flooding regimes, the higher intensity of rainfall could increase the design rainfall with potential for higher peak flows and run-off volumes.

The potential wetter than average conditions may increase the opportunity for wet forecast conditions at the onset of a rainfall event. The increases in rainfall intensity via climate change impacts producing rainfall events are expected to potentially show trends of more frequent, higher intensity storms and may translate into higher peak flows and runoff volumes providing for increased flood inundation.

As noted above, CN has a clear understanding of the potential impacts and considered that these changes in rainfall intensity in inevitable and have in place, The City of Newcastle Strategic Climate Change Policy (NCC, 2010), which reinforces the objectives of developing and implementing adaptation and mitigation actions as a response to climate change.

CN's adapted NCWFRM states the elements such as flood planning levels can be reviewed if required in the future.

Moreover, CN's Stormwater Management DCP, which is currently under on-going review, has considered the climate change factors and have considered the most recent rainfall data.

It can therefore be conclusively stated that City of Newcastle is has put the environmental changes a forefront factor in managing climate change.

5.0 Flood Risk Analysis

Flash flood levels at 1% AEP event generally ranges approximately between 1.7m AHD to 2.2m AHD, with risk to property being generally between P1 and P3, which is noted to be low risk (See Table 2 below for flood levels at each identified Site).

The Risk to Life hazard classification is defined at the PMF event. At PMF event, flood levels is noted to be between 2.93m AHD - 3.01m AHD, with risk to life being L4 (high risk) mainly in the flood storage areas and L2 (low risk) in flood fringe areas. Based on CN's NCWFRM, areas and lots with L4 and above risk to life categories is required to be provided with a Flood Refuge (shelter in place).

Figure 7 presents the Risk to Life mapping under the current modelled baseline and development scenarios.

Based on the flood data analysis as indicated in Table 2, majority of the sites must be provided with a flood refuge.

Due to the high hazard flooding surrounding the site and the associated risk to life during an extreme flood event, it is a requirement of Council to provide a safe flood-free refuge area on site for people to shelter during a flood. The flood-free refuge should be elevated above the level of the PMF.

Generally, any flood refuge in flash flood areas is set to PMF levels and the building must be designed to withstand the flood loadings (including debris). As majority of the future buildings within the identified sites will mainly be high rise building and noting that the flood level difference between Flood Planning Level (FPL) and PMF level is approx. around 500mm in depth. The flood refuge must be designed to be of sufficient size to accommodate the total number of people that could be expected to be using the development.

It is anticipated that future multi-storey building can be structurally designed for the expected PMF flash flood impacts.

For impacts from ocean flooding being at 3.4m AHD at PMF event (see discussions above), the depth will be approx. 900mm at the worst case. Although the levels are higher, the flood impacts from ocean flooding are generally noted to be less risky with lower impacts to property. As earlier noted, and discussed, the future multi-unit high rise buildings can be designed for ocean flood impacts.

Note: Risk to Property aka Highest Property Hazard Category (P) and is often relates to Hydraulic Behaviour Threshold (H).

- CN's flood risk is presented in a simplified form in the Additional information for the holders of Flood Information Certificate (refer to Appendix 2).

The below snip of extracts from the Additional information for the holders of Flood Information Certificate, in general, provides an insight in the understanding of the flood risks and risk matrix.

Snip of the information is below:

Highest Property Hazard Category:

Property hazards describe the danger that flood waters might pose to the property of persons affected by flooding. Generally, the descriptions are:

- P1** Parked or moving cars remain stable
- P2** Parked or moving heavy vehicles remain stable
- P3** Suitable for light construction (eg timber frame, masonry and brick veneer)

- P4** Suitable for heavy construction (eg steel frame, and concrete)
- P5** Hydraulically unsuitable for normal building construction

They are determined by direct correlation to the Hydraulic Behaviour Threshold (P1 relates to a Hydraulic Behaviour Threshold of H1) as determined at the flood-planning event, usually the 1% AEP flood. The Hydraulic behaviour thresholds used in the determination of these hazards are shown in the figure N1.

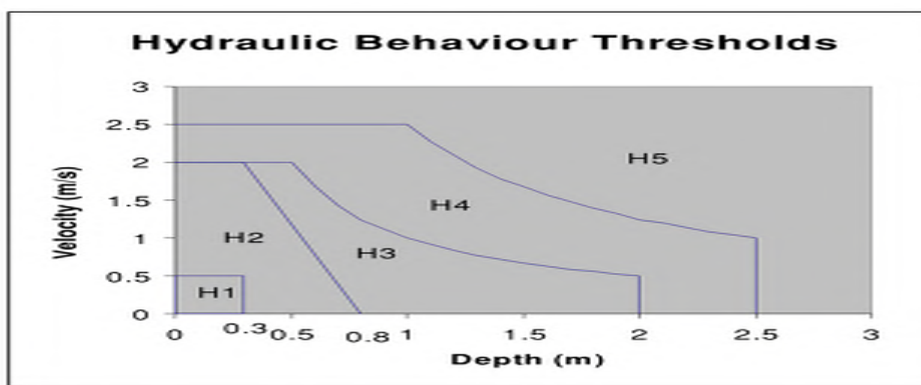


Figure N1 – Hydraulic Behaviour Thresholds

Highest life Hazard Category:

Life hazards describe the danger that flood waters might pose to the lives of persons affected by flooding. Generally, the descriptions are:

Table N1 Life hazard descriptions

HAZARD FACTOR	HAZARD CLASSIFICATION				
	L1 N	L2 N	L3 N	L4 N	L5 N
Effective Warning	Y	Y	N	N	N
Effective capacity to allow evacuation to flood free land	Y	Y	N	N	N
Rate of rise of flood waters	Slow	Flash	Flash	Flash	Flash
Duration of Flooding	Too long for refuge enclosed by floodwaters to be appropriate	Short enough for occupation during the entire flood to be appropriate	Short enough for occupation during the entire flood to be appropriate	Short enough for flood free refuge enclosed by floodwaters to be appropriate	Short enough for flood free refuge enclosed by floodwaters to be appropriate
Escape route	An obvious rising escape route to flood free land outside of the entire flood is available	An obvious rising escape route to flood free land outside of the entire flood is available	There is no obvious rising escape route to flood free land outside of the entire flood	There is no obvious rising escape route to flood free land outside of the entire flood	There is no obvious rising escape route to flood free land outside of the entire flood
Nature of encasing floodwaters	Flood free land outside of the entire flood can be reached before the flooding affects the site itself	Reaching flood free land outside of the entire flood requires evacuation by wading or heavy vehicles, and these floodwaters are suitable for wading or heavy vehicles at all times	Enclosing floodwaters are suitable for wading and for medical emergency evacuation by wading or heavy vehicle at all times	Enclosing floodwaters are not suitable for wading or heavy vehicles, and require heavy construction for structural stability of buildings (eg steel frame and concrete)	No form of normal building construction would be feasible to ensure structural stability in enclosing floodwaters
Evacuation need:	Required to flood free land outside of the entire flood	Required to flood free land outside of the entire flood	Not Required	Required to a suitable flood free refuge within the enclosed flood waters	Normally not possible (therefore normally unsuitable for development)
Evacuation problems	Still need to ensure that any proposed development in these areas will not cause additional burden on emergency response services	Still need to ensure that any proposed development in these areas will not cause additional burden on emergency response services	N/A (for able bodied adults)	Evacuation shall be self directed and full scale	Enclosing flood waters are so hazardous that evacuation by normal means to flood free land outside the entire flood would not be contemplated. The structural stability of an on site refuge cannot be assured by normally available building types, and therefore a refuge enclosed by floodwaters cannot normally be provided

Life hazards are used to manage risks to life and accordingly, are determined by considering the hydraulic behaviour threshold (see figure N1) at the Probable Maximum Flood (PMF).

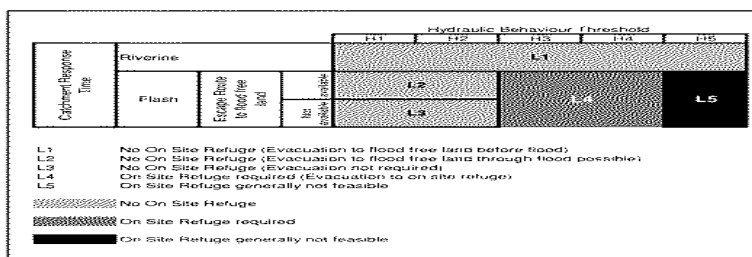


Figure N2 – Life Hazard determination

5.1 Flood Planning Level

In CN LGA Flood Planning Level (FPL) is imposed on all new developments and is generally set 500mm above the predicted 1% AEP flood level. The flood planning level (FPL) is used to set floor levels of developments to reduce the impact of flooding on potential property damage and is generally derived from the worst case 1% AEP flood scenario or a known flood event such as the June 2007 Pasha Bulker event.

In Wickham, the FPL for the identified sites is set by a both flash and ocean 1% AEP flooding event, whichever is greater.

- Table 2 below provides the recommended FPL for each identified site.

For each identified site, the applicants can attain a Flood information Certificate from CN, which will provide the localised flood information and behaviours. The FIC will also provide the recommended FPL, which should form the basis of the future building design. The flood certificate also contains a PDF of the Additional information for the holders of Flood Information Certificate (refer to Appendix 2). This Additional information package contains simplified explanation of CN's flood risk management process and also provides the risk assessment matrix. The document is considered to be very effective tool to for basic understanding of flooding and educational purposes.

Besides the structural adequacy of building to withstand flood forces, CN DCP also requires that the building areas under the FPL to be designed with flood compatible materials.

6.0 Flooding Constraints for Development

The Flood Impact Categorisation undertaken as part of the Newcastle City-Wide Floodplain Risk Management Study and Plan categorises areas of floodplain that act as floodways or areas of flood storage. Development is typically discouraged within areas critical for the conveyance of flood flows, such as floodways and overland flow path.

Council's DCP (2012) effectively allows development in flood fringe areas, prohibits development within floodways and limits the filling of flood storage areas to 20%. The flood impact categorisation mapping for PMF events (extreme case scenario) is presented in Figure 7 and 1% AEP scenario is presented in Figure 6 (BMT). During an extreme flood event such as the PMF, the development sites are noted to be flood storage and all the identified sites are noted as to be in a flood fringe zone in a 1% AEP event.

As discussed earlier, the floodplain classification suggests that development of the site is expected to have a negligible impact for the major flood events. However, potential significant impacts to the existing Risk to Life profile should be considered at each of the future development case.

The framework for flood risk management is already in place for Wickam and the future indivial site development applications must address the elements as per CN's LEP and DCP.

6.1 Flood Emergency Response Plan (FERP)

It is anticipated that the road network will generally be blocked due to the road being at lower terrain levels and some roads potentially forming as flood flowpath. Shelter in place (Flood refuge) provisions has been considered by NCWFRM as an appropriate means to ensure that the risk to life is appropriately managed.

It is very important to be prepared in the event of a flood. As the planning proposal sites and other sites in Wickham are at high risk, a Flood Emergency Response Plan (FERP) is required for the identified sites. This is to ensure occupants are suitably informed of the property specific flood risk, what to do to prepare for a flood, and what to do during a flood.

To ensure that the new building occupants understand the flood risks in the area and to ensure long term management of the flood risks, future developments on sites must prepare and maintain a flood emergency response plan (FRMP) for the life of the building. Such a plan generally sets the framework for the future owners or strata management to ensure that flood risks are appropriately managed.

A flood emergency response plan is to describe the following components:

- a) Likely flood behaviour
- b) Flood warning systems
- c) Education awareness program
- d) Evacuation and evasion procedures
- e) Evacuation routes and flood refuges and
- f) Flood preparedness and awareness procedures for residents and visitors

Considerations should include the full range of flood risks, the proposed use of the site, site access constraints and local area evacuation routes to high ground. As much as possible, the plan should be aimed at self-directed evacuation or evasion to minimise the draw on limited State Emergency Services resources.

7.0 Conclusion

Due to the potential high risk with flooding surrounding the identified sites and the associated risk to life during an extreme flood event, it is a requirement of CN to provide a safe flood-free refuge area on site for people to shelter during a flood. The flood-free refuge should be elevated above the level of the PMF. The planning proposed increases the height of future developments. The future developments are anticipated to address CN's DCP and LEP, must also address the following:

- The provision of shelter in place to be at or above the PMF
- To be designed to withstand the expected hydraulic forces of the PMF event
- To be of sufficient size to accommodate the total number of people that could be expected to be using the development.
- Future buildings floor level must be at set minimum FPL
- Structure below the FPL shall be designed with flood compatible materials
- a flood risk management plan be prepared for each future development

It could therefore be conclusively stated that the flood risks in Wickham can be appropriately managed under the current CN adapted flood management framework.

TABLE 2

			Flood Data Analysis and recommended FPL										
Site Location as per Image 1	Ocean Flooding					Flash (Local) Flooding						Flood Classification	Flood Planning Level (FPL - m AHD)
	PMF Level (m AHD)	1% AEP (m AHD)	Risk to Property (H)	Risk to Life	Velocity (m/s)	PMF Level (m AHD)	PMF Velocity (m/s)	1% AEP m AHD) (E) – east (W) - west	1% AEP Velocity (m/s)	Risk to Property (P) aka Hydraulic Threshold Behaviour (H)	Risk to Life	(E) – east (W) - west	
Site 1	3.4	2.2	H1	L1	0.14	3.01	0.76	2.18	0.3	P1	L4	Storage	2.68
Site 2	3.4	2.2	H2	L1	0.14	3.00	0.13	2.05	0.19	P2	L4	Storage	2.55
Site 3	3.4	2.2	H2	L1	0.14	2.98	0.10 (E) 0.07 (W)	2.05	0.1 (E) 0.12 (W)	P2	L4	Storage (approx. 50%)	2.55
Site 4	3.4	2.2	H2	L1	0.14 0.14	2.97	0.06 (E) 0.07 (W)	2.00 (E) N/A (W)	0.1 (E)	P2	L4	Fringe	2.50
Site 5	3.4	2.2	H3	L1	0.14 0.14	2.95	0.07 (E) 0.08 (W)	2.00 (E) 1.80 (W)	0.10 (E) 0.18 (W)	P3	L4	Storage (approx. 80%)	2.50
Site 6	3.4	2.2	H1	L1	0.14	2.94	0.15	1.95	0.12	P1	L4	Fringe	2.50
Site 7	3.4	2.2	H3	L1	0.14	2.94	0.11	1.73	0.17	P3	L4	Storage	2.50
Site 8	3.4	2.2	H1	L1	0.14	2.93	0.14	N/A	N/A	P1	L2	Fringe	2.50
Site 9	3.4	2.2	H3	L1	0.14	2.95	0.08 (E) 0.07 (W)	1.70	0.15	P3	L4	Storage (approx. 80%)	2.50
Site 10	3.4	2.2	H1	L1	0.14	2.98	0.20 (E) 0.03 (W)	2.05 (E) N/A (W)	0.18 (E) N/A (W)	P1	L4	Storage (E) Fringe (W)	2.55

PART B - Ministerial Directions, LEP and DCP Requirements and Response

Section 1 – Ministerial Direction Requirements and Responses

Table 3 – Ministerial Directions Requirements & CN Response

Requirement	Response by City of Newcastle
Objectives	
The objectives of this clause are as follows:	
(a) ensure that development of flood prone land is consistent with the NSW Government's Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005, and	CN can conclusively state that the proposed planning proposal is consistent with the NSW Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005.
(b) ensure that the provisions of an LEP that apply to flood prone land are commensurate with flood behaviour and includes consideration of the potential flood impacts both on and off the subject land.	CN can conclusively state that the proposed planning proposal meets Newcastle City Council LEP and DCP Requirements – See Table 5 and 6 below.
1. A planning proposal must include provisions that give effect to and are consistent with: <ul style="list-style-type: none"> a) the NSW Flood Prone Land Policy, b) the principles of the Floodplain Development Manual 2005, c) the Considering flooding in land use planning guideline 2021, and d) any adopted flood study and/or floodplain risk management plan prepared in accordance with the principles of the Floodplain Development Manual 2005 and adopted by the relevant council. 	The planning proposal has considered these documents and is generally consistent with the requirements.
2. A planning proposal must not rezone land within the flood planning area from Recreation, Rural, Special Purpose or Conservation Zones to a Residential, Business, Industrial or Special Purpose Zones.	The planning proposal does not propose any rezoning of Recreation, Rural, Special Purpose or Conservation Zones to a Residential, Business, Industrial or Special Purpose Zones.
3. A planning proposal must not contain provisions that apply to the flood planning area which:	
a) permit development in floodway areas,	The planning proposal identified lots are located outside the floodway categorisation.

<p>b) permit development that will result in significant flood impacts to other properties,</p>	<p>The planning proposal is within an already identified Wickham Masterplan growth area and the identified lots are generally considered to be developable land, with all the lots generally meeting the Newcastle LEP and DCP requirements for development purposes. Developments within Wickham Masterplan area are not expected to significantly impact other properties from a flooding perspective and City of Newcastle (CN) have considered and accepted the flood risks as part this Master planning of the precinct.</p>
<p>c) permit development for the purpose of residential accommodation in high hazard areas,</p>	<p>The potential developments are being noted to be in a high risk to life hazard area (L4) from PMF flash (local) flood events only, thus a minor inconsistency with this part of the Ministerial direction.</p> <p>(See Table 1 with flood data and classification for each identified lot).</p> <p>Although the planning proposal seeks to add additional building height to the identified lots, the proposal is noted to be within the Wickham Masterplan growth area in the LGA, with CN having a clear understanding on the pre-anticipated increase in residential living.</p> <p>Wickham growth precinct is managed as a part of the Newcastle City Wide Flood Risk Management Plan (NCWFRM).</p> <p>The precinct has been flood modelled for various different flooding scenarios, typically flash and ocean flooding, while impacts from Hunter River floods and climate change have also been factors of consideration for various flood events scenarios.</p> <p>The flood data and flood risk management framework have been well documented in NCWFRM and the associated City-wide Mapping.</p> <p>Overall, for 1% AEP flood events, Wickham is noted to be at a low-risk area, thus paving way for potential development in the precinct.</p> <p>Flood risks for high hazard properties are anticipated to be managed via the planning review process. Generally, buildings will be required to be built to the flood planning level (FPL) and flood refuge (shelter in-place) will be required in each development case.</p> <p>Site specific flood risk management plan is generally required to be prepared for high-risk sites, with potential for flood warning systems. All the above risk management and planning assessment elements are very well documented in the Newcastle LEP and 4.01 Flood Management Section of the DCP.</p> <p>It is considered that the overall flood risks for the</p>

	<p>Wickham area and proposed planning proposal is manageable within its current flood management framework and the inconsistencies with the Ministerial directions are considered minor in nature.</p> <p>The above noted flooding documents, together with the other flood studies are readily available to the general public..</p> <p>Link to CN's Flood Information is provided below: https://www.newcastle.nsw.gov.au/living/environment/flooding</p>
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Requirement	Response
<p>d) permit a significant increase in the development and/or dwelling density of that land,</p>	<p>The planning proposal for the identified lots will likely increase the dwelling density within the identified lots by way of additional height increase, that could make way for potential new residential units.</p> <p>Generally, the additional dwelling density is considered by CN to be well within the Wickham master plan development area and will not alter the form of development envisaged for sites, exceptionally noting that there will be additional height to the buildings.</p> <p>As discussed in (c) above, this potential inconsistency is manageable and minor in nature since the identified sites are already embarked for development as per the City's anticipated vision for the growth of Wickham.</p> <p>The flood risks for the planning proposals and future developments of these sites can conclusively be stated to be appropriately managed under the NCWFRM, LEP and DCP.</p>
<p>e) permit development for the purpose of centre-based childcare facilities, hostels, boarding houses, group homes, hospitals, residential care facilities, respite day care centres and senior housing, in areas where the occupants of the development cannot effectively evacuate,</p>	<p>The planning proposal's main objective is to seek additional increased height for potential residential development purposes.</p> <p>If in any case the identified sites pursue development perspectives as indicated in this part of the ministerial direction, CN's LEP and DCP 4.01 have already established processes by which the associated flood risks could be managed.</p>
<p>f) permit development to be carried out without development consent except for the purposes of exempt development or agriculture. Dams, drainage canals, levees, still require development consent,</p>	<p>Not applicable.</p> <p>CN expects that any such proposals will require a development consent.</p>
<p>g) are likely to result in a significantly increased requirement for government spending on emergency management services, flood mitigation and emergency response measures, which can include but are not limited to the provision of road infrastructure, flood mitigation infrastructure and utilities, or</p>	<p>Some of the identified sites has no reliable evacuation routes during a 1% AEP flood event as the local road network is generally compromised. It is however noted that some surrounding main road areas and park areas may still be flood free, thus allowing emergency operations if necessitated.</p> <p>In a PMF event, it is noted that the area will not be accessible. The main flood emergency strategy for the developments is to have a flood refuge (shelter in place) and dependency on SES</p> <p>The planning proposal is not likely to</p>

	substantially increase the requirements for Council or government spending on flood mitigation measures, infrastructure, or services.
h) permit hazardous industries or hazardous storage establishments where hazardous materials cannot be effectively contained during the occurrence of a flood event.	As discussed in the above responses, the planning proposal seeks additional development height, with the aim towards increased residential accommodation. The development will be set at or above the flood planning level. Notably, the planning proposal itself is targeting residential type developments and the proposal is not aimed at any form of industrial developments. If in any case the identified sites pursue development perspectives as indicated in this part of the ministerial direction, CN's LEP and DCP have already established processes by which the associated flood risks could be managed.
<p>4. A planning proposal must not contain provisions that apply to areas between the flood planning area and probable maximum flood to which Special Flood Considerations apply which:</p> <ul style="list-style-type: none"> a) permit development in floodway areas b) permit development that will result in significant flood impacts to other properties, c) permit a significant increase in the dwelling density of that land, 	<p>To date, Special Flood Considerations have not been adopted by the City of Newcastle.</p> <p>Notwithstanding the above, CN has led from the forefront in support of the Special Flood Considerations changes to the LEP.</p> <p>CN's Flood Management Planning framework, Planning LEP and DCP have already been, to a major extent, geared to manage the identified type of developments as noted in the Special Flood Considerations.</p> <p>In this regard, CN can state that some of the recent development applications have been reviewed in line with the Special Flood Considerations.</p>

Requirement	Response
<p>d) permit the development of centre-based childcare facilities, hostels, boarding houses, group homes, hospitals, residential care facilities, respite day care centres and seniors housing in areas where the occupants of the development cannot effectively evacuate,</p> <p>e) are likely to affect the safe occupation of and efficient evacuation of the lot, or</p> <p>f) are likely to result in a significantly increased requirement for government spending on emergency management services, and flood mitigation and emergency response measures, which can include but not limited to road infrastructure, flood mitigation infrastructure and utilities</p>	
<p>5. For the purposes of preparing a planning proposal, the flood planning area must be consistent with the principles of the Floodplain Development Manual 2005 or as otherwise determined by a Floodplain Risk Management Study or Plan adopted by the relevant council.</p>	<p>CN can confirm the planning proposal sites are within the flood planning area guidelines and is consistent with the principles of the Floodplain Development Manual.</p> <p>As earlier noted, CN has an adapted flood risk management plan in effect.</p>

Section 1.1

Consistency with the Ministerial Direction

The Ministerial Direction does understand and permits inconsistencies. In this regard, CN notes the following two Ministerial Directions is inconsistent in the planning proposal:

- Direction 4.1 (3) (c)
- Direction 4.1 (3) (d)

The above inconsistencies have been discussed in depth in Table 2 above under each noted Ministerial directions.

The following are highlights of the discussions noted above:

- CN have an adapted Newcastle City Wide Flood Risk Management Plan (NCWFRM).
- CN's LEP and Flood Management DCP 4.01 are applicable for the identified sites and any future developments can be managed as part of any future development application process.
- The planning proposal sites are noted to be part of the adapted Wickham Masterplan growth area, which sets the precedence for future developments.
- The increased height variation is considered minor in nature and the flood risks are considered to be consistent with the principles set in NCWFRM.

- Each site could be provided with a flood refuge and the future buildings can be designed to comply with the required flood planning level. A flood warning system can also be considered for sensitive sites.

Table 4 - Inconsistencies with Ministerial Direction

Requirement	Response
A planning proposal may be inconsistent with this direction only if the planning proposal authority can satisfy the Planning Secretary (or their nominee) that:	
(a) the planning proposal is in accordance with a floodplain risk management study or plan adopted by the relevant council in accordance with the principles and guidelines of the Floodplain Development Manual 2005, or	The inconsistency is due to intensification of development above the existing height controls. This is justified by the availability of on-site refuge in these future developments. Specifically, the flood refuge requirement is outlined on page 192 of the Newcastle City Wide Floodplain Risk Management Study and Plan and is also reinforced in the DCP Clause 4.01.04.
(b) where there is no council adopted floodplain risk management study or plan, the planning proposal is consistent with the flood study adopted by the council prepared in accordance with the principles of the Floodplain Development Manual 2005 or	Not applicable.
(c) the planning proposal is supported by a flood and risk impact assessment accepted by the relevant planning authority and is prepared in accordance with the principles of the Floodplain Development Manual 2005 and consistent with the relevant planning authorities' requirements, or	Not applicable.
(d) the provisions of the planning proposal that are inconsistent are of minor significance as determined by the relevant planning authority.	Applicable – please see justification provided in this report.

Section 2 - LEP Requirements and Responses

Table 5 – LEP Requirements and CN responses

Requirement	Response
(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,	The planning proposal is for additional heights to future buildings. The future developments will be required to manage the flooding risks as part of any development application and planning review process. Sites will be designed to be elevated at or above the Flood Planning Level which shall addresses the risk to property. Risk to life mitigation measures is discussed further in Items 2(c) and 2(d) below.
(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,	Climate change is likely to cause an increase to flood levels at the ground floor levels. Wickham area has well documented flood data to manage the sea level rise and climate change impacts. Generally, the flood functions and set up of FPL will managed as part of the development application process. This is discussed in Item 2(a) below.
(c) to avoid adverse or cumulative impacts on flood behaviour and the environment,	CN's Wickham Masterplan have pre-set the development footprint. The planning proposal itself does not seek to alter the ground floor arrangements and as such, it is not expected

Requirement	Response
	to that the predicted future developments will significantly impact other properties from a flooding perspective.
(d) to enable the safe occupation and efficient evacuation of people in the event of a flood.	This is addressed in Item 2(c) below.
(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	The site is noted as flood storage and flood fringe and the developable sites is considered compatible with the flood function. Climate change is likely to cause an increase to flood levels at the ground floor levels. The planning proposal itself is for height increase over the identified future development sites and this part of the LEP is considered to be satisfied as the buildings will be set to be at a higher elevation.
(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	The proposal does not seek to alter the ground floor arrangement and as such is not expected to significantly impact other properties from a flooding perspective.
(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	<p>The proposed future developments with higher risk to life will be required to be provided with a flood refuge. The building itself will act as a refuge in the PMF event.</p> <p>Majority of the local road network will likely be flooded in a PMF event, thus the shelter in place is an element that is still required to be provided by CN. Overall, the capacity of existing evacuation routes will not be significantly impacted.</p>
(d) incorporates appropriate measures to manage risk to life in the event of a flood, and	<p>For higher risk sites, a Flood Emergency Response Plan will be required to be developed as part of the development process. Such a plan will also assist to increase the awareness of flood risks, identify persons responsible for emergency response, and recommend actions to prepare and respond to a flood emergency.</p> <p>The inclusion of flood refuge in individual buildings will be a good measure to minimise the risk to life. This is noted to be consistent with Newcastle DCP and adopted City-wide Floodplain Risk Management Study and Plan.</p>

(e) will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of riverbanks or watercourses.

The planning proposal permits additional height to future developments and is part of the Wickham masterplan growth area. The future developments will be required to comply with CN's Stormwater Management DCP 7.06 and Stormwater and Water Efficiency Technical Manual, which require appropriate management of stormwater from development sites. CN expects that the future developments will not cause any increases in erosion or siltation downstream, destruction of riparian vegetation, or reduction in the stability of riverbanks or watercourses.

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

Requirement	Response
(a) the impact of the development on projected changes to flood behaviour as a result of climate change,	CN considers it to be feasible to incorporate climate change requirements into future building development designs. It is anticipated that the future developments will not change the flood behaviour as a result of climate change.
(b) the intended design and scale of buildings resulting from the development,	The proposed planning proposal is for redevelopment of mainly existing industrial buildings or sites which have older buildings in the Wickham area. The future developments seem to be aimed at potential mixed-use developments with residential units and some commercial activity on ground levels. CN have a well-established flood planning process and it is anticipated that the developments will not have any significant impact from a floodplain management perspective.
(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,	The inclusion of shelter in place (flood refuge) will be an appropriate measure to manage the risk to life for PMF events. Furthermore, Flood Emergency Response Plan will be required for individual sites as part of the development process. This plan will also be a great means to increase the awareness of flood risks, identify persons responsible for emergency response, and actions to prepare and respond to a flood emergency.
(d) the potential to modify, relocate or remove buildings resulting from development if the surrounding area is impacted by flooding or coastal erosion.	<p>The development context of the identified sites is generally pre-established via the Wickham Masterplan including the subdivision pattern and important elements such as road network. Thus, the future developments are already confined by the masterplan layout and CN have considered the overall flood risks in the area and long-term management of the risks as part of the planning of the area. The remove of the older and industrial type buildings and future design of buildings is anticipated to assist the CN with the management of flood risks in the area.</p> <p>It is highly unlikely that the future developments will significantly impacted by coastal erosion.</p>

Section 3 - DCP Requirements and Responses

Table 6 – DCP Requirements and CN responses

Requirement	Response
<p>4.01.01 Floodways</p> <p>1. No building or structure erected, and no land filled by way of the deposition of any material within any area identified as a floodway except for minor alterations to ground levels which do not significantly alter the fundamental flow patterns for: a) roads, b) parking, c) below ground structures, d) landscaping.</p> <p>2. Where dividing fences across floodways are unavoidable, they are constructed only of open type fencing that does not restrict the flow of flood waters and are resistant to blockage. New development shall be designed to avoid fences in floodways</p>	<p>Not applicable as subject site is not affected by floodway.</p>

Requirement	Response
<p>4.01.02 Flood Storage</p> <p>1. Not more than 20% of the area of any development site in a flood storage area is filled. The remaining 80% is generally developed allowing for underfloor storage of floodwater by the use of suspended floor techniques such as pier and beam construction.</p> <p>2. Where it is proposed to fill development sites, the fill does not impede the flow of ordinary drainage from neighbouring properties, including overland flow.</p>	<p>A number of sites are located within the flood storage area. However, the planning proposal is for height increases above the identified building footprint area in accordance with the Wickham Masterplan.</p> <p>Notwithstanding the above, any future development application for any of the sites must address the flood storage criteria of the DCP. Generally, an engineering solution such as a suspended type of slab design or allowing the ground level areas to be designed for temporary storage of flood waters are some potential design options.</p> <p>Ultimately, the development application planning process will ensure that the development satisfies the flood storage requirements listed in the DCP.</p> <p>Refer to Table 1 to see the flood classification and sites which are within the flood storage area.</p>

4.01.03 Management of risk to property

1. Floor levels of all occupiable rooms of all buildings are not set lower than the FPL.
2. Garage floor levels are no lower than the 1% Annual Exceedance Probability Event. However, it is recognised that in some circumstances this may be impractical due to vehicular access constraints. In these cases, garage floor levels are as high as practicable.
3. Basement garages may be acceptable where all potential water entry points are at or above the probable maximum flood (PMF), excepting that vehicular entry points can be at the FPL. In these cases, explicit points of refuge are accessible from the carpark in accordance with the provisions for risk to life set out below.
4. Electrical fixtures such as power points, light fittings and switches are sited above the FPL unless they are on a separate circuit (with earth leakage protection) to the rest of the building.
5. Where parts of the building are proposed below the flood planning level, they are constructed of water-resistant materials.
6. Areas where cars, vans and trailers are parked, displayed or stored are not located in areas subject to property hazard of P2 or higher. Containers, bins, hoppers and other large floatable objects also are not stored in these areas. Heavy vehicle parking areas are not located in areas subject to property hazard P3 or higher.
7. Timber framed, light steel construction, cavity brickwork and other conventional domestic

The planning proposal is for the height increase and the identified sites will be set at flood planning level (FPL).

The development application process generally ensures that proposed developments comply with the DCP requirements and FPLs are set as part of the application.

Further to this, where a flood refuge is recommended, CN generally requires a suitably qualified structural engineer to confirm if the building can withstand the forces due to flood water.

Requirement	Response
<p>building materials are generally not suitable forms of construction where the property hazard is P4 or higher. Where property hazard is P4, the structure is certified by a practising structural engineer to withstand the hydraulic loads (including debris) induced by the flood waters.</p> <p>8. Property hazards of P5 are generally unsuitable for any type of building construction and building is discouraged from these areas. Where building is necessary, the structure is certified by a practising structural engineer to withstand the hydraulic loads (including debris) induced by the flood waters.</p>	
<p>4.01.04 Management of potential risk to life</p> <p><u>Risk to life category L5</u></p> <p>1. Risk to life hazards of L5 are generally unsuitable for any type of building construction and building is discouraged from these areas. Reliable safe escape to high ground is likely not possible and normal building construction would likely suffer structural failure from the force of floodwaters, so that any people seeking refuge in the building would likely perish. Where building is necessary, the structure is certified by a practising structural engineer to withstand the hydraulic loads (including debris) induced by the flood waters.</p> <p><u>Islands</u></p> <p>2. The formation of islands in the floodplain during a flood is a potentially dangerous situation, especially when floods larger than the FPL totally inundate the island for an extended period. Development of such land is considered with great care.</p> <p><u>On-site refuge</u></p> <p>3. On-site refuge is to be provided for all development where the life hazard category is L4 unless the proposed development is less than 40m from the perimeter of the PMF extent and the higher ground is accessible.</p> <p><u>Standards for on-site refuge</u></p> <p>4. Where on-site refuge is required for a development, it should comply with the following minimum standards: (a) The minimum on-site refuge level is the level of the PMF. On-site</p>	<p>Some of the planning proposal sites are noted to be in the L4 life hazard category which requires the provision of flood refuges.</p> <p>Future DA's for the sites will ensure that a flood refuge is provided for sites with a L4 risk to life category and above and that a flood risk management plan is prepared to manage the risks.</p> <p>From the desktop review of these sites, it is considered feasible to provide flood refuge based on the elevations. At the detailed building design stage, consideration should be given by a suitably qualified structural engineer that the additional building loads will not affect the ability of the building to withstand the forces due to flood water. This is generally ensured by way of conditions with the DA consent.</p> <p>Overall, CN considers that the Wickham Masterplan areas can be appropriately managed for flood risks and future developments will likely achieve compliance with this part of the DCP.</p>

Requirement	Response
refuges are designed to cater for the number of people reasonably expected on the development site and are provided with emergency lighting. (b) On-site refuges are of a construction type able to withstand the effects of flooding. Design certification by a practising structural engineer that the building is able to withstand the hydraulic loading due to flooding (at the PMF).	

Section 4

Conclusion

This assessment has considered the feasibility of implementing the Ministerial Directions 4.1 for Flooding and Council's LEP and DCP requirements for floodplain management purposes.

It can be conclusively stated that the planning proposal increase in height limit to the future developable sites could feasibly achieve the intent with the Ministerial Directions together with achieving compliance with City of Newcastle's LEP and DCP 4.01 and principles for floodplain management requirements with the future building design of the sites.

APPENDIX 1 - FLOOD MAPS

Figure 1 - PMF Flash Flood Extent

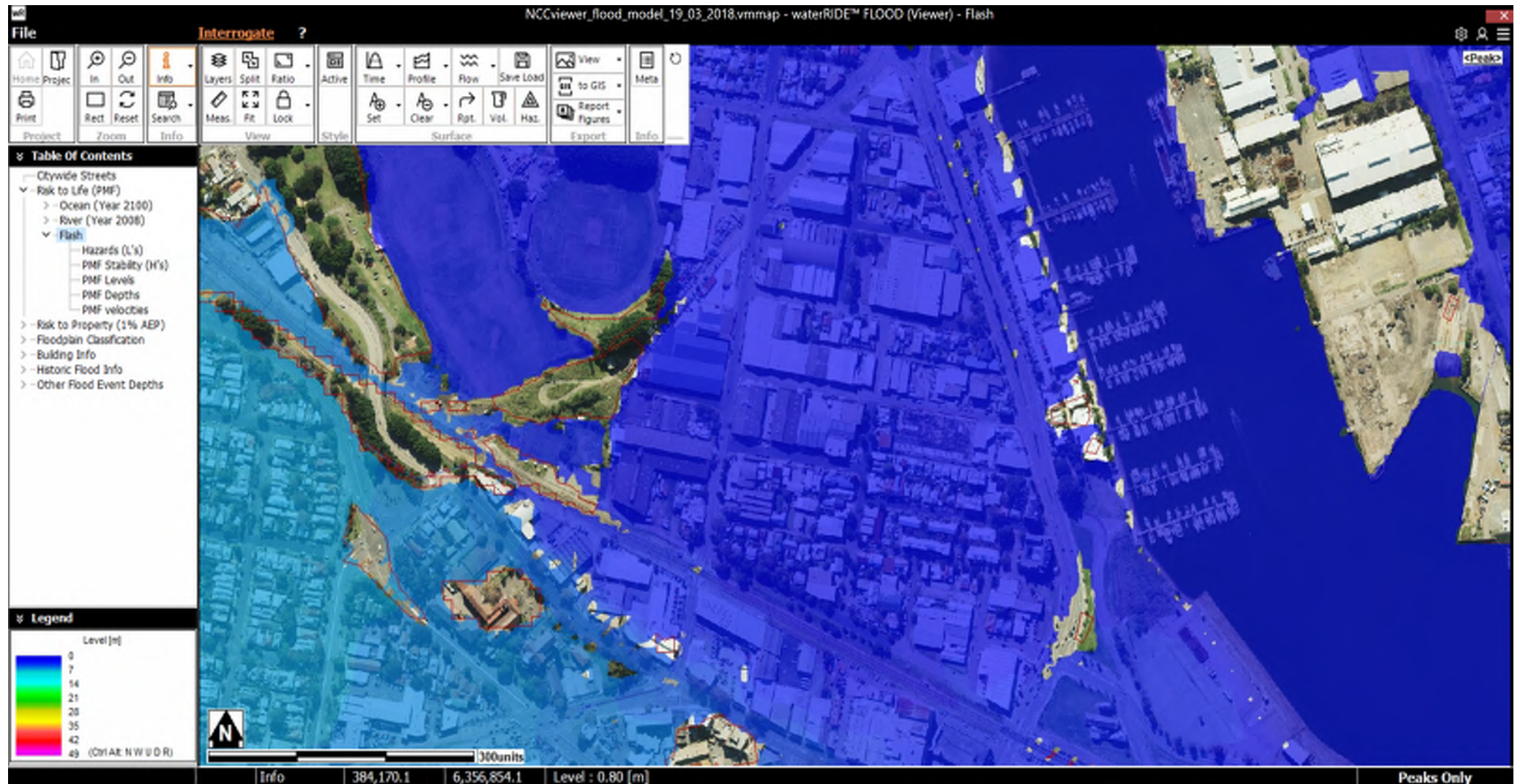


Figure 2 - PMF Flash Flood Risk to Life

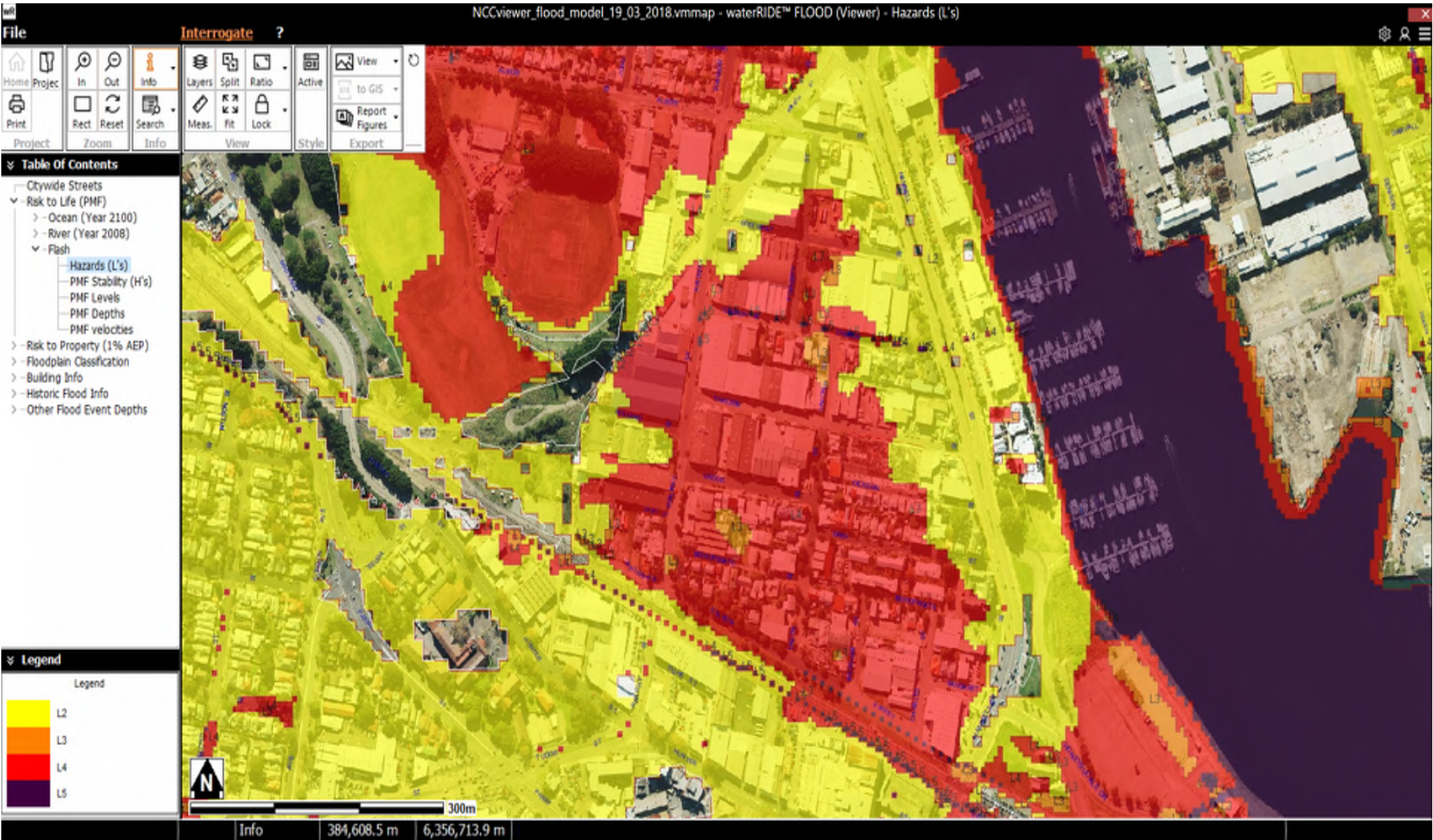


Figure 3 – Flash Flood 1% AEP Flood Extent and Level

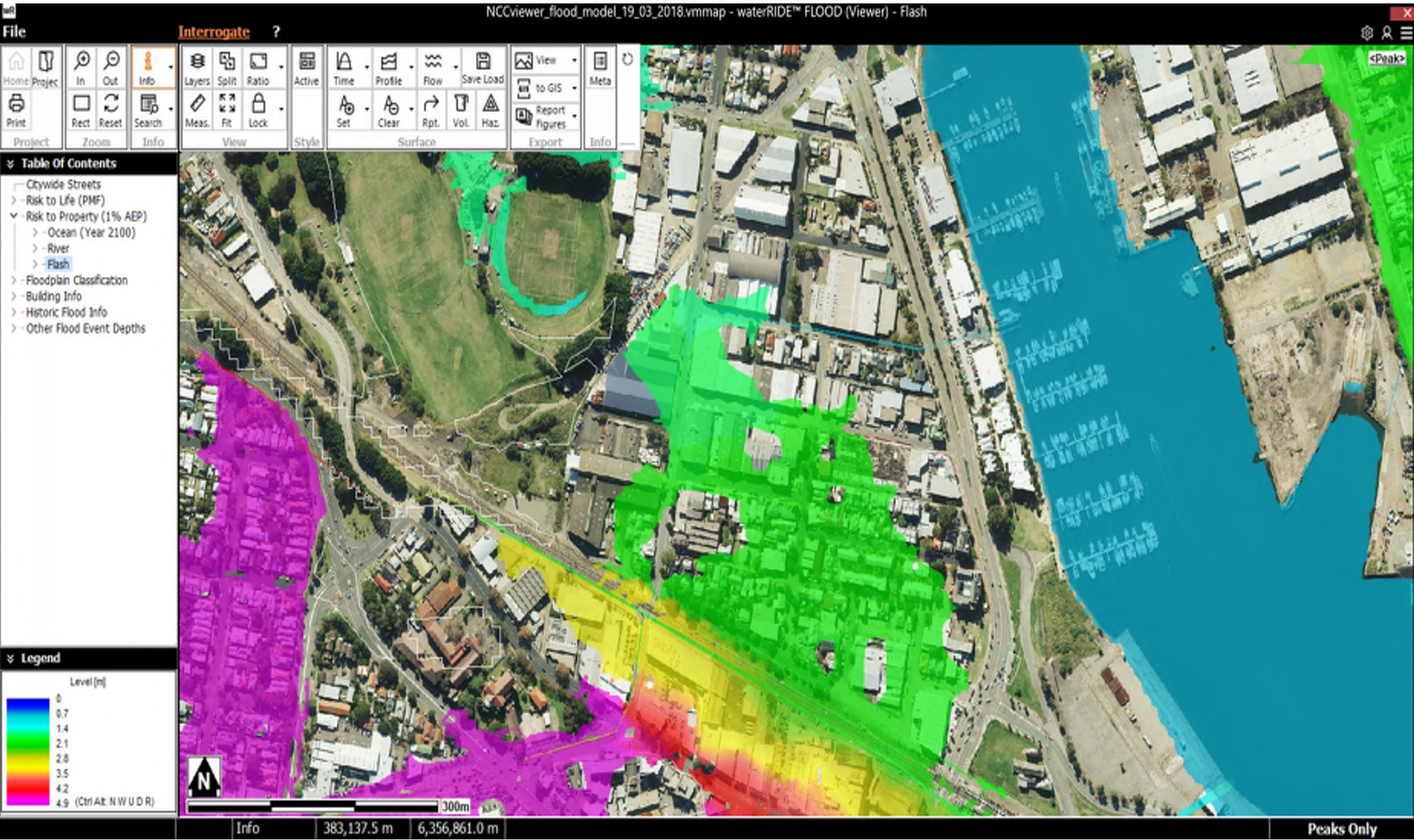


Figure 4 – Flash Flood 1% AEP – Risk to Property

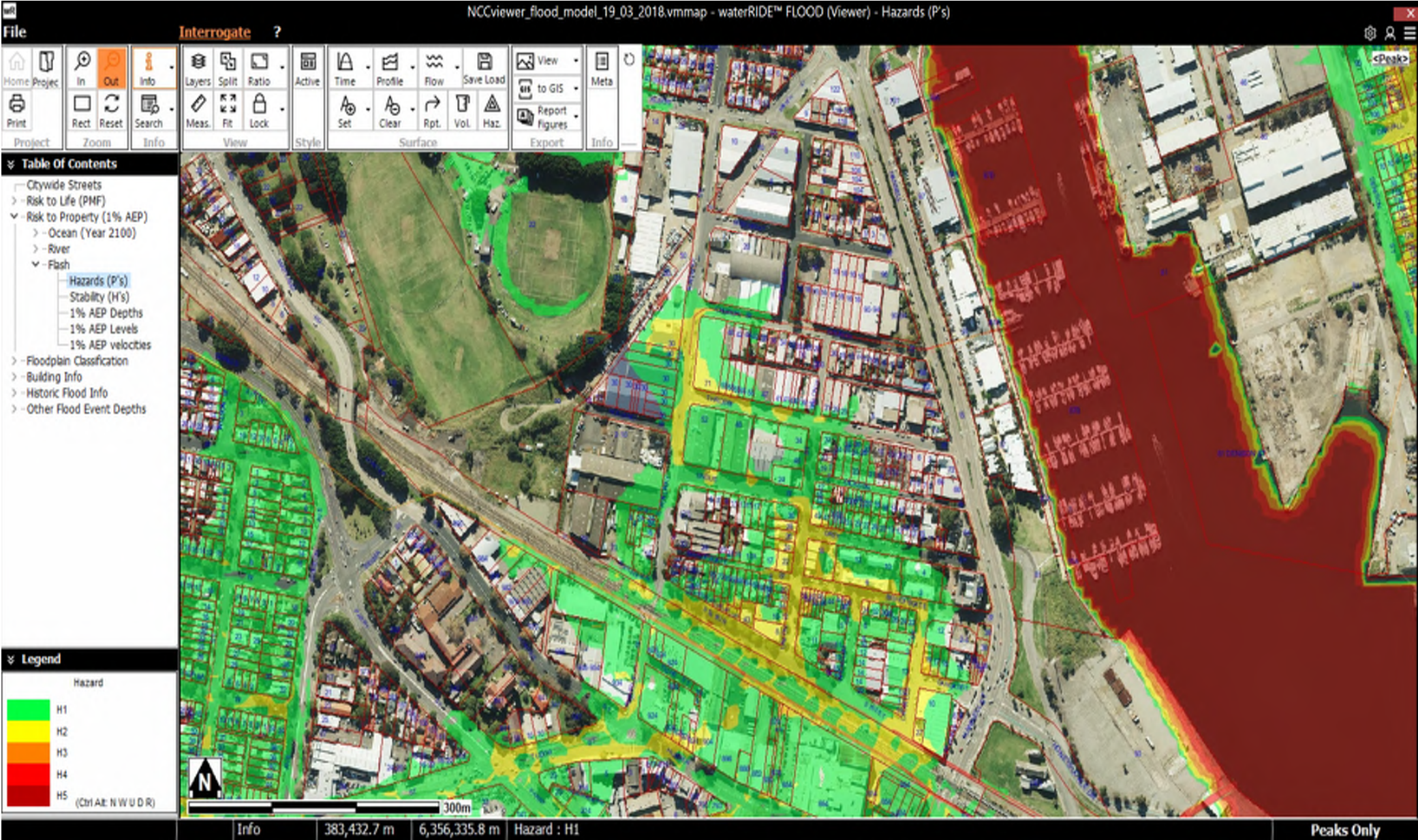


Figure 5 – Flash Flood 1% AEP – Flood Depth

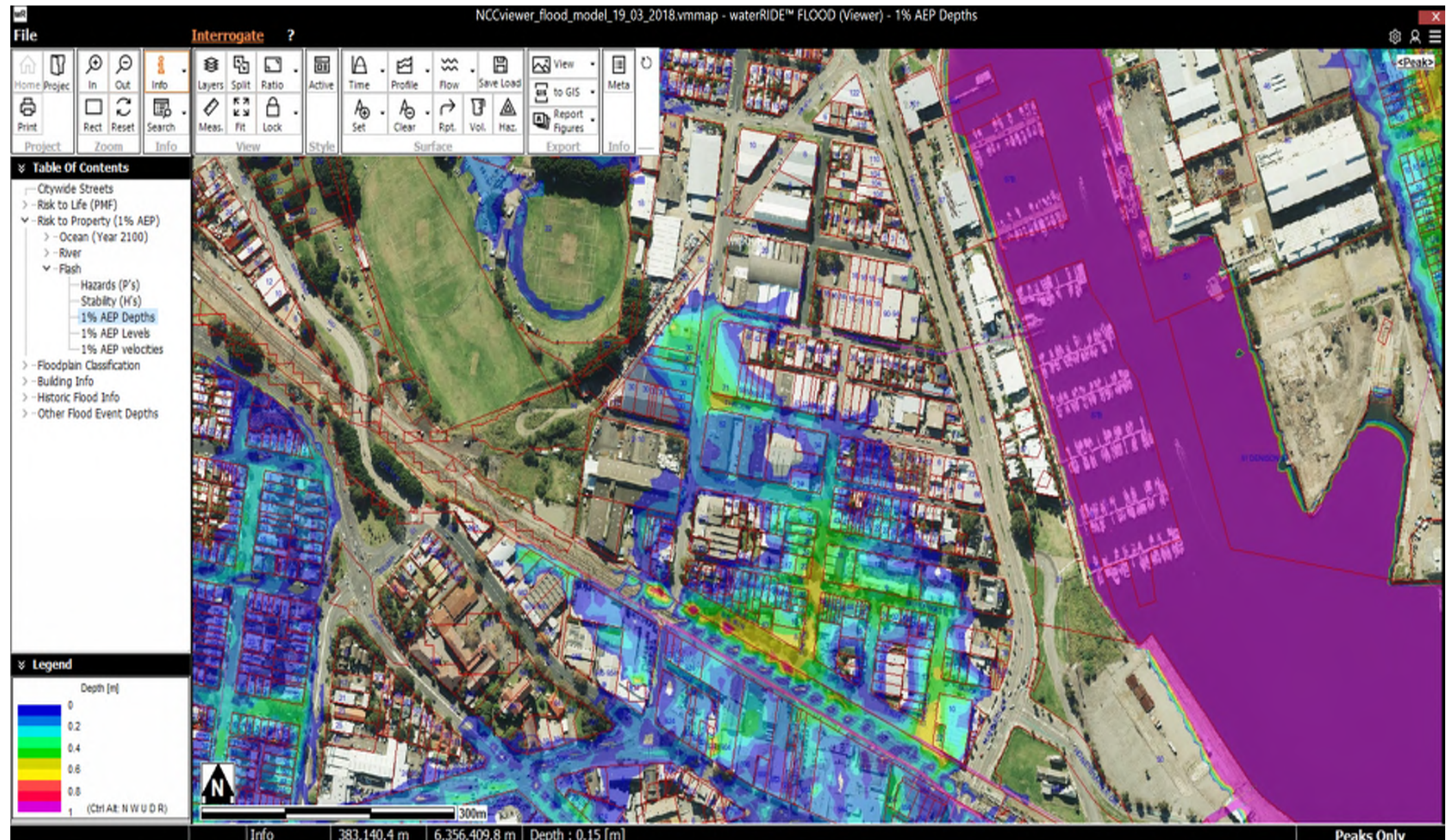


Figure 6 – Flash Flood 1% Flood Classification (BMT) (Wickham area circled)

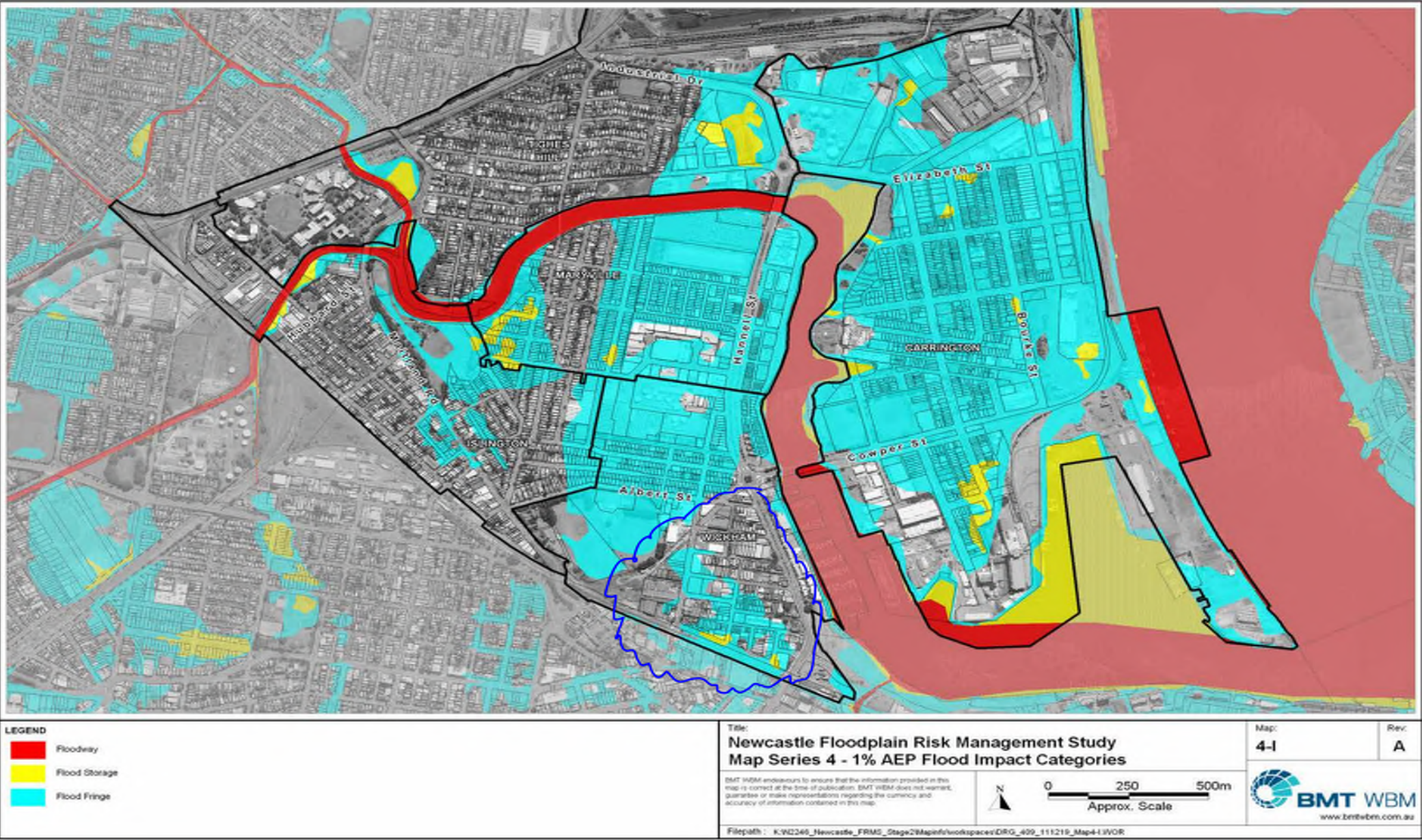


Figure 7 - PMF - Flood Classification



Figure 8 - PMF Ocean Flood Extent (Year 2100)



Figure 9 – Ocean Flood 1% AEP – Risk to Property (Year 2100)

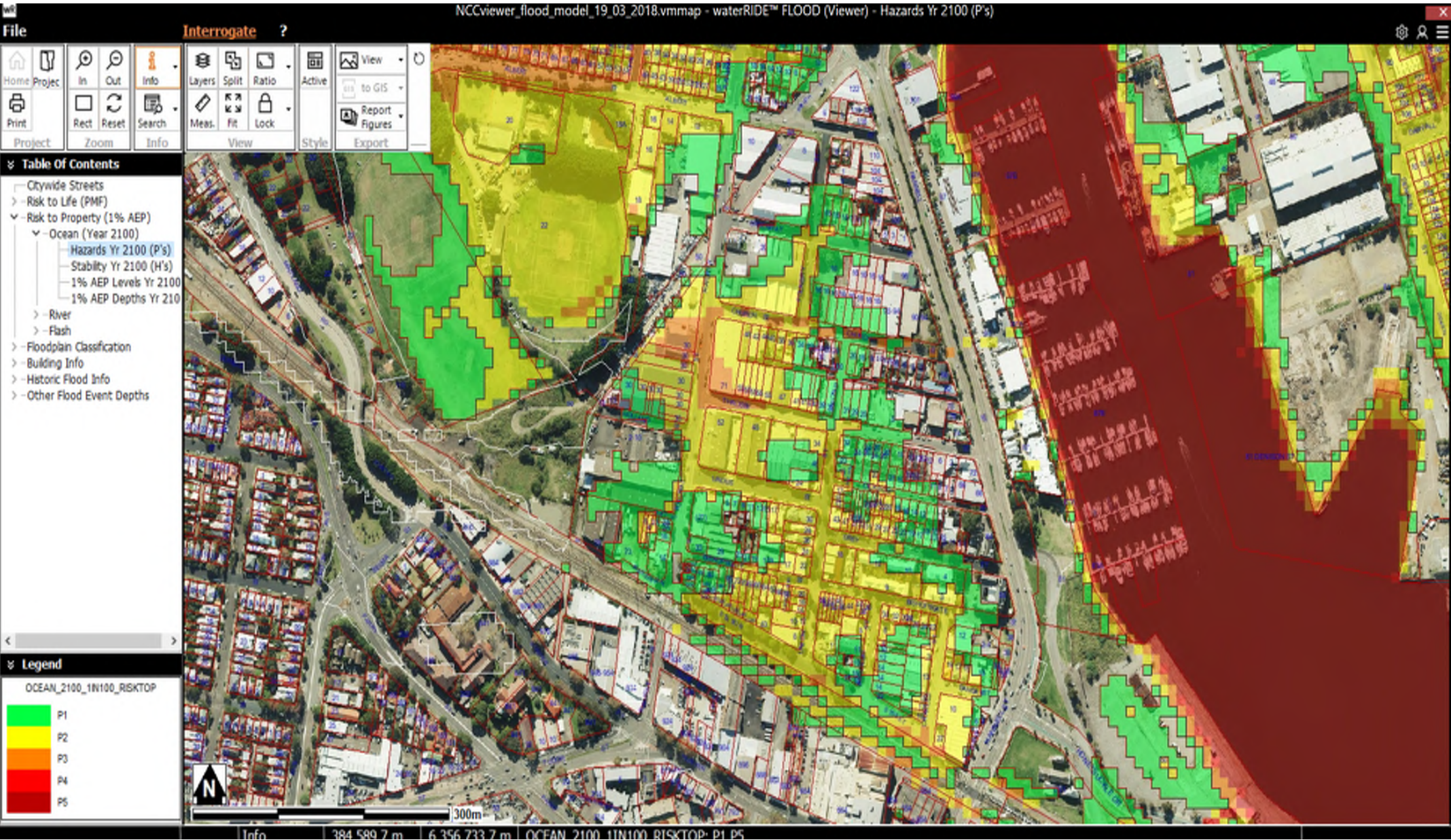


Figure 10 - Ocean Flood 1% AEP – Flood Depth (Year 2100)

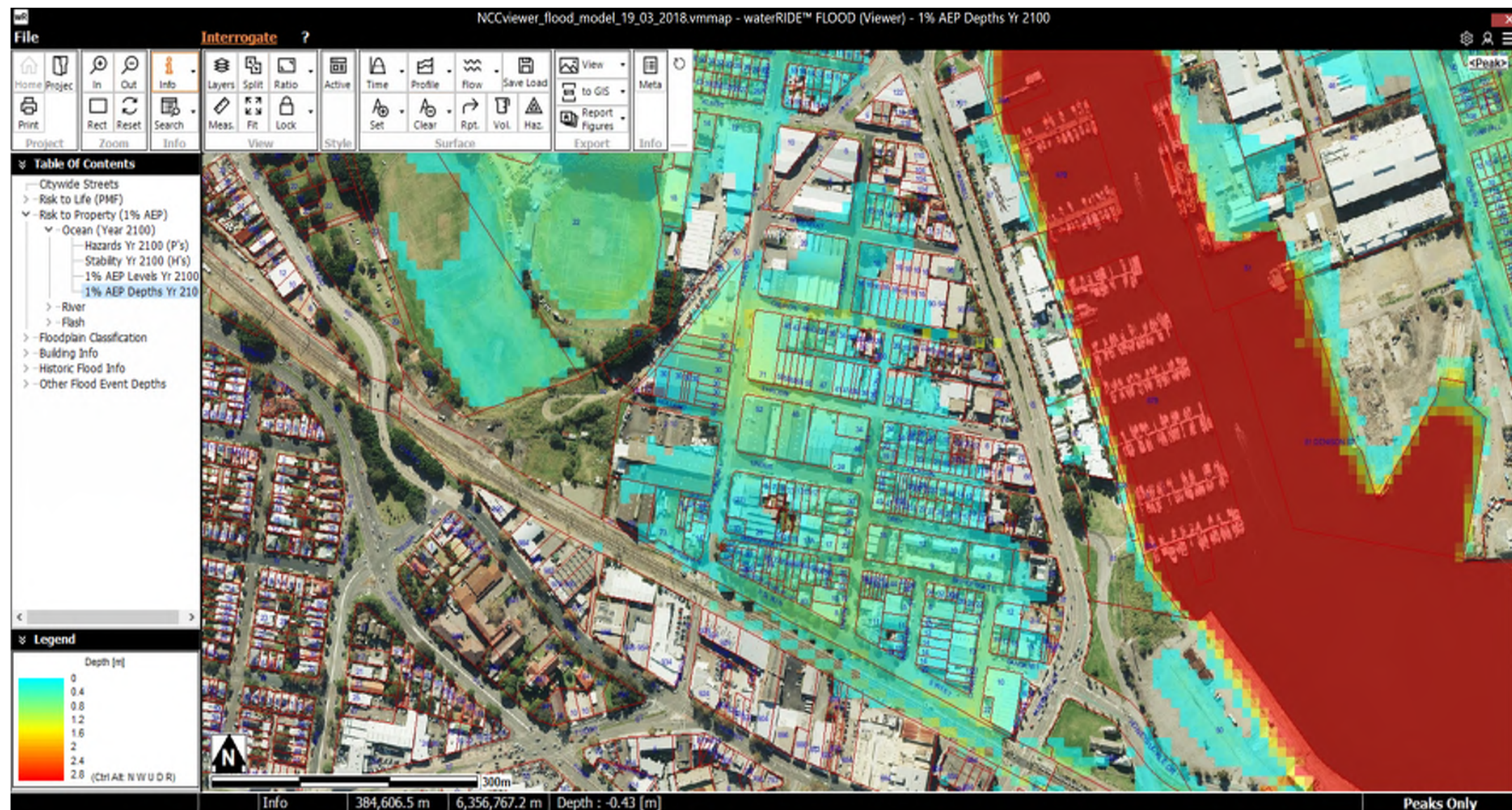


Figure 11 – Flash Flood – 1% AEP Velocity Map

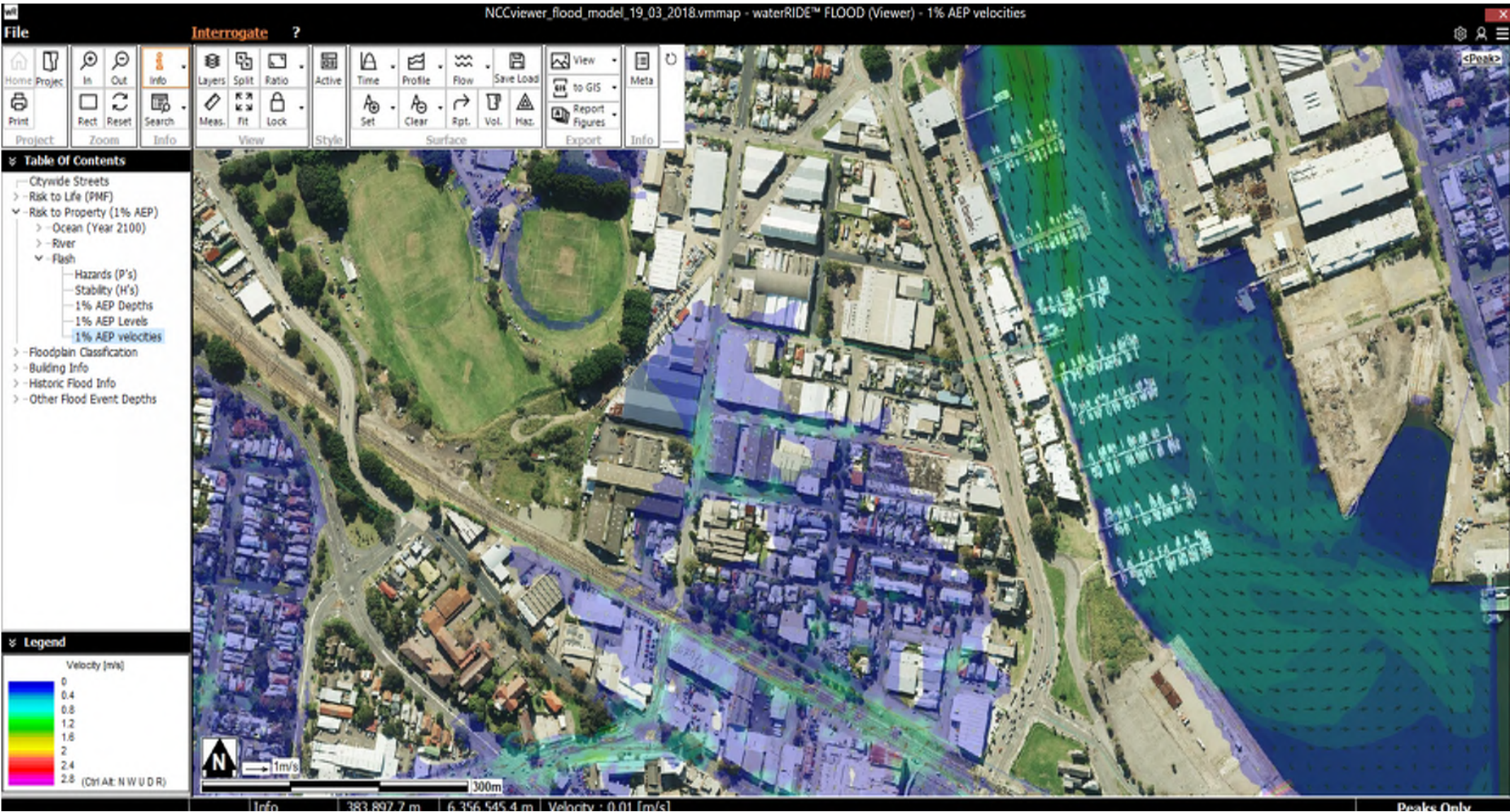
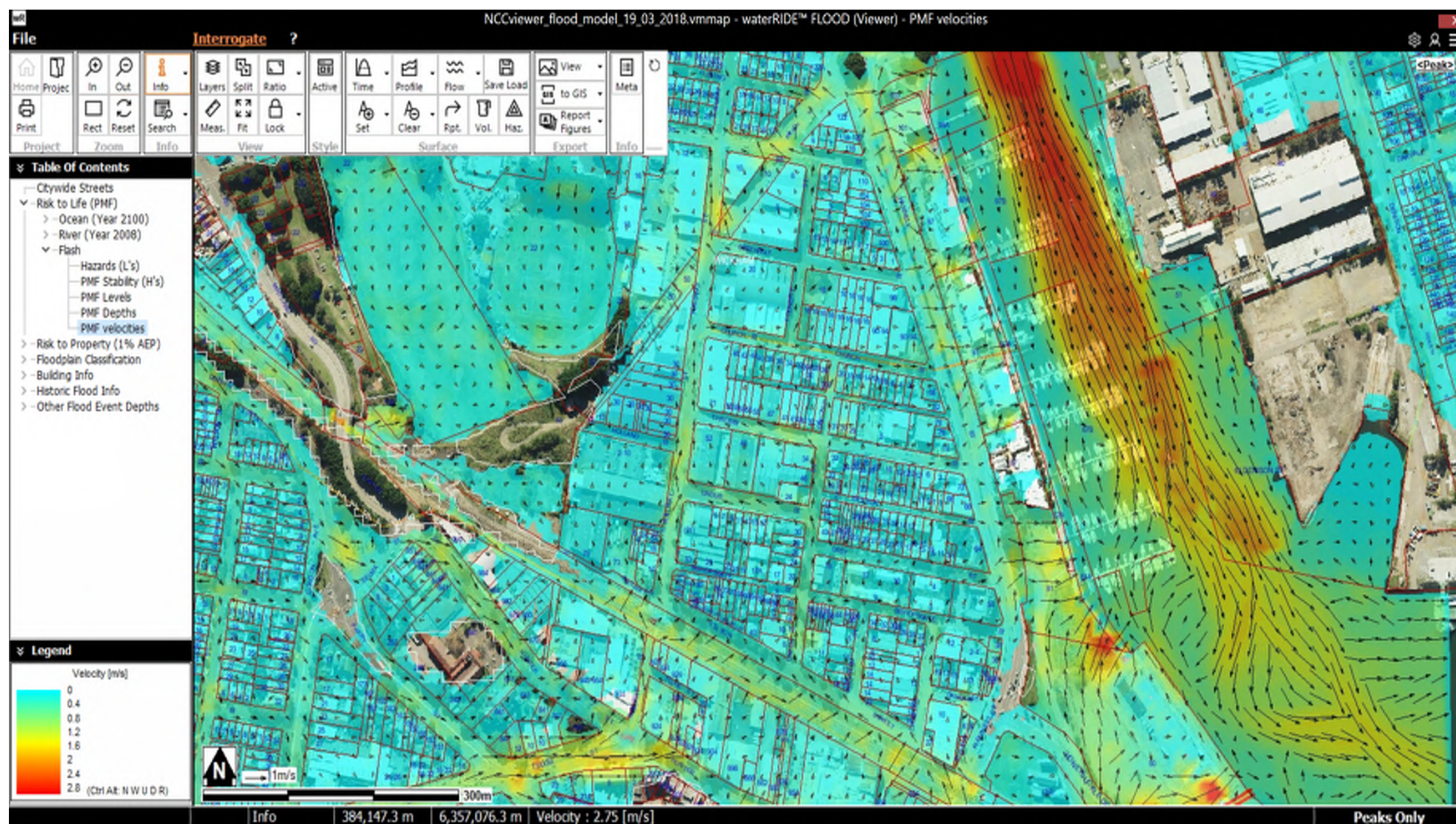


Figure 12 – Flash Flood – PMF Velocity Map



Appendix 2 – Copy of CN's Additional information for the holders of Flood Information Certificate



Additional information for the holders of Flood Information Certificates

This information explains the terms used in Newcastle City Council's Flood Information Certificates and provides some basic information on Councils requirements for future development of flood prone land.

Compliance with these requirements in the Development Control Plan does not guarantee approval, however, in most cases, the flood issues can be resolved by adhering to these guidelines.



**Newcastle City-wide Floodplain Risk
Management Plan 2012
Newcastle Development Control Plan**



FLOOD CERTIFICATE NOTES

GENERAL:

- The information presented in the Certificate relates to the Newcastle City-wide Floodplain Risk Management Plan and the Newcastle Development Control Plan, which have been developed in accordance with the principles of the NSW Government's Flood Prone Land Policy.
- Council's flood information is compiled from a composite of data. The variability of rainfall itself is a major factor in the uncertainty of flood information and accordingly, this certificate is only an estimate of real flood characteristics. Any particular flood is likely to be different to the conditions described in this certificate.
- Council acknowledges that its flood information is incomplete and varies in accuracy, however it is the best available to Council at the time of issue.
- Where information is presently not known, it is denoted by "unknown"
- From time to time, on going research and studies will replace or add to Council's flood information. Accordingly, the information in this certificate is not warranted after the day of issue.
- Should you disagree with Council's assessment of the flood behaviour, you may conduct your own investigations or enquires and submit them to Council for consideration. Where revision of this assessment is warranted, Council is committed to making such amendments to its information.

EXPLANATIONS FOR TERMS USED IN THE FLOOD INFORMATION CERTIFICATE

Is any part of the site affected by a Floodway?

Generally, where a property is affected by a floodway, we will provide you with additional information on where we believe the floodway to be by way of a map. In some circumstances it may be possible to redirect a floodway subject to appropriate engineering advice. You should start by discussing the matter with a development officer from Council.

A Floodway is a pathway taken by major discharges of floodwaters, the obstruction or partial obstruction of which would cause a significant redistribution of floodwaters, or a significant increase in flood levels. Floodways are often aligned with natural channels and are usually characterised by deep and relatively fast flowing water.

The Newcastle DCP 2012 states:

"No building or structure is to be erected and no land is to be filled by way of the deposition of any material within any area identified as a floodway except for:

Minor alterations to ground levels for roads, parking, below ground structures and landscaping, provided that the fundamental flow patterns are not significantly altered.

Where dividing fences across floodways are unavoidable, they are to be constructed only of open type fencing that will not restrict the flow of flood waters and be resistant to blockage. New development shall be designed to avoid fences in floodways."

Is any part of the site affected by a flood storage area?

Where a property is wholly affected by flood storage area, we will answer "yes" to this question on the Flood Information Certificate. Where a property is partly affected, we will provide additional information by way of a map.

Flood storage area is an area where flood water accumulates and the displacement of that floodwater will cause a significant redistribution of floodwaters, or a significant increase in

flood levels, or a significant increase in downstream flood frequency. Flood storage areas are often aligned with floodplains and are usually characterised by deep and slow moving floodwater.

The Newcastle DCP 2012 states:

"Not more than 20% of the area of any development site in a flood storage area is to be filled. The remaining 80% can generally be developed allowing for underfloor storage of floodwater by the use of suspended floor techniques such as pier and beam construction.

Where it is proposed to fill development sites, the fill is not to impede the flow of ordinary drainage from neighbouring properties, including overland flow."

1% Annual Exceedence Probability (AEP) event level:

The 1% AEP event is the basic benchmark for Council's development controls. It is a flood event that has a 1 in 100 chance of being exceeded in any one year. Conceptually, it is similar to a "1 in 100 year" event, except that the term 1 in 100 years conveys the notion that the event is definitely going to happen in a 100 year time frame, and will only occur once in that time frame. In fact, a 1 in 100 year event has a 67% probability of occurring once in any nominate hundred year period.

Levels are reduced to the Australian Height Datum. This means that the quoted levels are heights above sea level. They can be compared to ground levels determined by a surveyor using the same datum to ascertain the likely flood depth.

In general, the minimum requirement for development of flood prone land is to set floor levels above the **Flood planning level (FPL)**. The flood planning level is the peak flood level for the flood planning event (usually the 1% AEP flood) **plus** the appropriate freeboard (usually, but not always 500mm, depending on the circumstances) to account for uncertainty, wave action and model error.

The Newcastle DCP 2012 states:

"Floor levels of all occupiable rooms of all buildings are not to be set lower than the FPL."

"Garage floor levels are to be set no lower than the 1% AEP flood event. However it is recognised that in some circumstances this may be impractical due to vehicular access constraints. In these cases, garage floor levels should be as high as practicable."

"Basement garages may be acceptable where all potential water entry points are at or above the probable maximum flood (PMF), excepting that vehicular entry points can be at the FPL. In these cases, explicit points of refuge should be accessible from the carpark in accordance with the provisions for risk to life set out below."

"Electrical fixtures such as power points, light fittings and switches are to be sited above the FPL unless they are on a separate circuit (with earth leakage protection) to the rest of the building."

"Where parts of the building are proposed to be below the flood planning level, they are to be constructed of water-resistant materials. "

Highest Property Hazard Category:

Property hazards describe the danger that flood waters might pose to the property of persons affected by flooding. Generally, the descriptions are:

P1 Parked or moving cars remain stable

P2 Parked or moving heavy vehicles remain stable

P3 Suitable for light construction (eg timber frame, masonry and brick veneer)

P4 Suitable for heavy construction (eg steel frame, and concrete)

P5 Hydraulically unsuitable for normal building construction

They are determined by direct correlation to the Hydraulic Behaviour Threshold (P1 relates to a Hydraulic Behaviour Threshold of H1) as determined at the flood-planning event, usually the 1% AEP flood. The Hydraulic behaviour thresholds used in the determination of these hazards are shown in the figure N1.

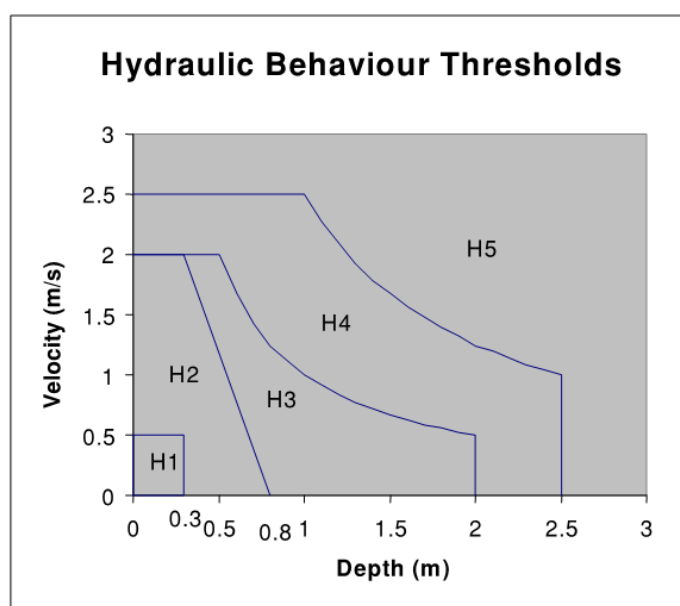


Figure N1 – Hydraulic Behaviour Thresholds

For the purposes of the flood information quoted here, the property hazard relates to the ground level as understood by Council at the time the information was collected. The property hazard cannot be used to determine the ground level of the site.

Property hazards can be reduced by filling a site, or raising floor levels as appropriate provided that the work is compatible with the applicable (if any) floodway or flood storage area.

In general, the minimum requirement for managing property risk is to set floor levels to the Flood planning level. The flood planning level is the level (usually expressed as a reduced level above the Australian Height Datum (AHD).

The Newcastle DCP 2012 states:

"Areas where cars, vans and trailers etc are parked, displayed or stored are not to be located in areas subject to property hazard of P2 or higher. Containers, bins, hoppers and other large floatable objects also are not to be stored in these areas. Heavy vehicle parking areas are not to be located in areas subject to property hazard P3 or higher."

"Timber framed, light steel construction, cavity brickwork and other conventional domestic building materials are generally not suitable forms of construction where the property hazard is P4 or higher. Where property hazard is P4, the structure shall be certified by a practising structural engineer to withstand the hydraulic loads (including debris) induced by the flood waters."

"Property hazards of P5 are generally unsuitable for any type of building construction and building is discouraged from these areas. Where building is necessary, the

structure is to be certified by a practising structural engineer to withstand the hydraulic loads (including debris) induced by the flood waters."

Highest life Hazard Category:

Life hazards describe the danger that flood waters might pose to the lives of persons affected by flooding. Generally, the descriptions are:

Table N1 Life hazard descriptions

HAZARD FACTOR	HAZARD CLASSIFICATION				
	L1	L2	L3	L4	L5
Effective Warning	Y	N	N	N	N
Effective capacity to allow evacuation to flood free land	Y	Y	N	N	N
Rate of rise of flood waters	Slow	Fast	Fast	Fast	Fast
Duration of Flooding	Too long for refuge enclosed by floodwaters to be appropriate	Short enough for occupation during the entire flood to be appropriate	Short enough for occupation during the entire flood to be appropriate	Short enough for flood free refuge enclosed by floodwaters to be appropriate	Short enough for flood free refuge enclosed by floodwaters to be appropriate
Escape routes	An obvious rising escape route to flood free land outside of the entire flood is available	An obvious rising escape route to flood free land outside of the entire flood is available	There is no obvious rising escape route to flood free land outside of the entire flood.	There is no obvious rising escape route to flood free land outside of the entire flood. An obvious rising escape route to flood free land outside of the entire flood is available	There is no obvious rising escape route to flood free land outside of the entire flood.
Nature of encasing floodwaters	Flood free land outside of the entire flood can be reached before the flooding affects the site itself	Reaching flood free land outside of the entire flood requires evacuation through encasing floodwaters, and these flood waters are suitable for wading or heavy vehicles at all times	Encasing floodwaters are suitable for wading and for light or emergency evacuation by wading or heavy vehicles at all times	Encasing floodwaters are not suitable for wading or heavy vehicles, and require heavy construction for structural stability of buildings (eg steel frame and concrete)	No form of normal building construction would be feasible to ensure structural stability in encasing floodwaters
Evacuation need:	Required to flood free land outside of the entire flood	Required to flood free land outside of the entire flood	Not Required	Required to a suitable flood free refuge within the enclosed flood waters	Normally not possible (therefore primarily unsuitable for development)
Evacuation problems	Site must be assessed that any proposed development in these areas will not cause additional burden on emergency response services	Site must be assessed that any proposed development in these areas will not cause additional burden on emergency response services	No (for able bodied adults)	Evacuation shall be self directed and self safe.	Encasing flood waters are so hazardous that evacuation by normal means to flood free land outside the entire flood, would not be contemplated. The structural stability of an on-site refuge cannot be assured by normally available building types, and therefore a refuge enclosed by floodwaters cannot (normally) be provided

Life hazards are used to manage risks to life and accordingly, are determined by considering the hydraulic behaviour threshold (see figure N1) at the Probable Maximum Flood (PMF).

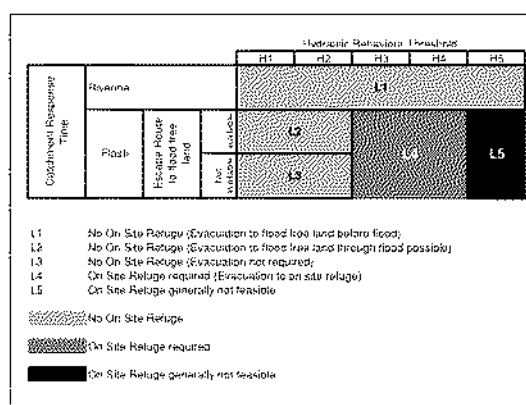


Figure N2 – Life Hazard determination

Figure N2 shows how the life hazard categories are determined in accordance with the methodology of the Newcastle City-wide Floodplain Risk Management Plan.

The Newcastle DCP 2012 states:

"On site refuge is to be provided for all development where the life hazard category is L4 or higher unless the proposed development is less than 40m from the perimeter of the PMF extent and the higher ground is accessible. "

"The minimum on-site refuge level is to be the level of the PMF. On site refuges are to be designed to cater for the number of people reasonably expected to be on the development site and are to be provided with emergency lighting."

"On site refuges are to be of a construction type able to withstand the effects of flooding. Design certification by a practising structural engineer that the building is able to withstand the hydraulic loading due to flooding (at the PMF) is required. "

The requirement for on site refuge (where applicable) will generally be satisfied by a two storey building form. However, for residential properties, an attic access ladder and suitable small platform will usually also suffice.

In most cases where on site refuge is required, the duration of the peak flood event is short and accordingly, it is not expected to have to utilise flood refuge areas for long periods of time, especially when their use the chance of them being used is generally less than 1% in any given year. Accordingly, comfort factors are not of large concern to owners, occupiers or Council in determining the suitability of flood refuges.

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