

Attachment One – Extract from Ballina LEP 2012 – land Use Table RU2 Rural landscape Zone

Zone RU2 Rural Landscape

1 Objectives of zone

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To maintain the rural landscape character of the land.
- To provide for a range of compatible land uses, including extensive agriculture.
- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within the zone and land uses within adjoining zones.
- To enable small-scale tourist-orientated development that is compatible with the rural nature of the land.
- To encourage development that involves restoration or enhancement (or both) of the natural environment if consistent with the production and landscape character of the land.
- To enable development that does not adversely impact on the natural environment, including habitat and waterways.
- To ensure that there is not unreasonable or uneconomic demands (or both) for the provision of public infrastructure.

2 Permitted without consent

Environmental protection works; Extensive agriculture; Home-based child care; Home occupations; Intensive plant agriculture

3 Permitted with consent

Agriculture; Airstrips; Animal boarding or training establishments; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cellar door premises; Cemeteries; Charter and tourism boating facilities; Community facilities; Correctional centres; Crematoria; Depots; Dual occupancies (attached); Dwelling houses; Environmental facilities; Extractive industries; Farm buildings; Flood mitigation works; Forestry; Function centres; Helipads; Home businesses; Home industries; Home occupations (sex services); Information and education facilities; Jetties; Kiosks; Liquid fuel depots; Marinas; Markets; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Public administration buildings; Recreation areas; Recreation facilities (major); Recreation facilities (outdoor); Restaurants or cafes; Roads; Roadside stalls; Rural industries; Rural supplies; Rural workers' dwellings; Sewerage systems; Signage; Storage premises; Tourist and visitor accommodation; Turf farming; Vehicle repair stations; Veterinary hospitals; Water recreation structures; Water supply systems; Wharf or boating facilities

4 Prohibited

Advertising structures; Backpackers' accommodation; Hotel or motel accommodation; Self-storage units; Serviced apartments; Any other development not specified in item 2 or 3



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Postal: Locked Bag 9022, Grafton NSW 2460

Our ref: PP_2014_BALLI_001_00 (14/06157)
Your ref: LEP Amendment Request
Teven Road Transport Precinct (14/20841)

Mr Paul Hickey
General Manager
Ballina Shire Council
PO Box 450
BALLINA NSW 2478

Dear Mr Hickey,

Planning proposal to amend Ballina Local Environmental Plan 2012

I am writing in response to your Council's letter dated 1 April 2014 requesting a Gateway determination under section 56 of the Environmental Planning and Assessment Act 1979 ("EP&A Act") in respect of the planning proposal to permit 'freight transport facility' and 'warehouse and distribution centre' as an additional permitted use on land at Teven Road, West Ballina.

As delegate of the Minister for Planning, I have now determined the planning proposal should proceed subject to the conditions in the attached Gateway determination.

I have also agreed the planning proposals inconsistencies with S117 Directions 1.1 Business and Industrial Zones, 1.2 Rural Zones, 1.5 Rural Lands and 4.1 Acid Sulfate Soils are justified by the Site Selection Investigation Study or are of minor significance. No further approval is required in relation to these Directions.

Council may still need to obtain the Secretary's agreement to satisfy the requirements of relevant S117 Directions, such as S117 Direction 4.3 Flood Prone Land. Council should ensure this occurs prior to the plan being made.

Plan making powers were delegated to councils by the Minister in October 2012. It is noted that Council has now accepted this delegation. I have considered the nature of Council's planning proposal and have decided to issue an authorisation for Council to exercise delegation to make this plan.

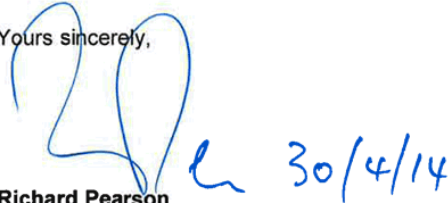
The amending Local Environmental Plan (LEP) is to be finalised within 9 months of the week following the date of the Gateway determination. Council should aim to commence the exhibition of the planning proposal as soon as possible. Council's request to draft and finalise the LEP should be made directly to Parliamentary Counsellors Office 6 weeks prior to the projected publication date. A copy of the request should be forwarded to the Department of Planning and Environment for administrative purposes.

The State Government is committed to reducing the time taken to complete LEPs by tailoring the steps in the process to the complexity of the proposal, and by providing clear and publicly available justification for each plan at an early stage. In order to meet these commitments, the Minister may take action under section 54(2)(d) of the EP&A Act if the time frames outlined in this determination are not met.

Bridge Street Office: 23-33 Bridge Street, Sydney NSW 2000 GPO Box 39 Sydney NSW 2001 DX 22 Sydney
Telephone: (02) 9228 6111 Facsimile: (02) 9228 6455 Website: www.planning.nsw.gov.au

Should you have any queries in regard to this matter, I have arranged for Ms Katrina Burbidge of the Department of Planning and Environment's regional office to assist you. Ms Burbidge can be contacted on (02) 6641 6600.

Yours sincerely,



Richard Pearson
Deputy Director General
Growth Planning and Delivery

Encl:
Gateway Determination
Written Authorisation to Exercise Delegation
Attachment 5 – Delegated Plan Making Reporting Template



Gateway Determination

Planning proposal (Department Ref: PP_2014_BALLI_001_00): to permit freight transport facility and warehouse and distribution centre on land at Teven Road, West Ballina.

I, the Deputy Director General, Growth Planning and Delivery at the Department of Planning and Environment as delegate of the Minister for Planning, have determined under section 56(2) of the EP&A Act that an amendment to the Ballina Local Environmental Plan (LEP) 2012 to permit 'freight transport facility' and 'warehouse and distribution centre' as an additional permitted use on land at Teven Road, West Ballina should proceed subject to the following conditions:

1. Council is to undertake a traffic study which considers the operation and potential traffic issues of the Tavern Road interchange with the Pacific Highway, given previous concerns raised by Roads and Maritime Services. The planning proposal is to be updated to take into consideration the outcomes of the study which is also to be placed on public exhibition with the planning proposal.
2. Prior to undertaking public exhibition, flood investigations are to be carried out to address the proposal's inconsistency with S117 Direction 4.3 Flood Prone Land. Council is to update the planning proposal to take into consideration the outcomes of this investigation.
3. Community consultation is required under sections 56(2)(c) and 57 of the Environmental Planning and Assessment Act 1979 ("EP&A Act") as follows:
 - (a) the planning proposal must be made publicly available for a minimum of **28 days**; and
 - (b) the relevant planning authority must comply with the notice requirements for public exhibition of planning proposals and the specifications for material that must be made publicly available along with planning proposals as identified in section 5.5.2 of *A Guide to Preparing LEPs (Department of Planning and Environment 2013)*.
4. Consultation is required with the following public authorities under section 56(2)(d) of the EP&A Act and/or to comply with the requirements of relevant S117 Directions:
 - Transport for NSW - Roads and Maritime Services
 - NSW Rural Fire Service (S117 Direction 4.4 Planning for Bushfire Protection)Each public authority is to be provided with a copy of the planning proposal and any relevant supporting material, and given at least 21 days to comment on the proposal.
5. A public hearing is not required to be held into the matter by any person or body under section 56(2)(e) of the EP&A Act. This does not discharge Council from any obligation it may otherwise have to conduct a public hearing (for example, in response to a submission or if reclassifying land).

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6. The timeframe for completing the LEP is to be **9 months** from the week following the date of the Gateway determination.

Dated 30 day of April

2014


Richard Pearson
Deputy Director General
Growth Planning and Delivery
Department of Planning and Environment

Delegate of the Minister for Planning

BALLINA PP_2014_BALLI_001_00 (14/06157)



WRITTEN AUTHORISATION TO EXERCISE DELEGATION

Ballina Shire Council is authorised to exercise the functions of the Minister for Planning under section 59 of the *Environmental Planning and Assessment Act 1979* that are delegated to it by instrument of delegation dated 14 October 2012, in relation to the following planning proposal:

Number	Name
PP_2014_BALLI_001_00	Planning proposal to permit 'freight transport facility' and 'warehouse and distribution centre' as an additional permitted use on land at Teven Road, West Ballina.

In exercising the Minister's functions under section 59, the Council must comply with the Department of Planning and Environment's "*A guide to preparing local environmental plans*" and "*A guide to preparing planning proposals*".

Dated 30 April 2014

A handwritten signature in blue ink, appearing to read 'Richard Pearson'.

Richard Pearson
 Deputy Director General
 Growth Planning and Delivery
 Department of Planning and Environment

Attachment 5 – Delegated plan making reporting template

Reporting template for delegated LEP amendments

Notes:

- Planning proposal number will be provided by the Department of Planning and Environment following receipt of the planning proposal
- The Department of Planning and Environment will fill in the details of Tables 1 and 3
- RPA is to fill in details for Table 2
- If the planning proposal is exhibited more than once, the RPA should add additional rows to **Table 2** to include this information
- The RPA must notify the relevant contact officer in the regional office in writing of the dates as they occur to ensure the publicly accessible LEP Tracking System is kept up to date
- A copy of this completed report must be provided to the Department of Planning and Environment with the RPA's request to have the LEP notified

Table 1 – To be completed by Department of Planning and Environment

Stage	Date/Details
Planning Proposal Number	PP_2014_BALLI_001_00
Date Sent to DoP&E under s56	1/04/2014
Date considered at LEP Review Panel	10/04/2014
Gateway determination date	30/04/2014

Table 2 – To be completed by the RPA

Stage	Date/Details	Notified Reg Off
Dates draft LEP exhibited		
Date of public hearing (if held)		
Date sent to PCO seeking Opinion		
Date Opinion received		
Date Council Resolved to Adopt LEP		
Date LEP made by GM (or other) under delegation		
Date sent to DoP&E requesting notification		

Table 3 – To be completed by Department of Planning and Environment

Stage	Date/Details
Notification Date and details	

Additional relevant information:

LOCAL PLANNING DIRECTIONS

Section 117(2) of the *Environmental Planning and Assessment Act 1979*

the EP&A Act provides that the consent authority must obtain from the relevant approval body (Mine Subsidence Board) the general terms of any approval proposed to be granted by the approval body in relation to the development. A consent granted by the consent authority must be consistent with the general terms of any approval proposed to be granted by the approval body.

Direction 4.2 – issued 1 July 2009

4.3 Flood Prone Land

Objectives

- (1) The objectives of this direction are:
 - (a) to 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
 - (b) to ensure that the provisions of an LEP on flood prone land is commensurate with flood hazard and includes consideration of the potential flood impacts both on and off the subject land.

Where this direction applies

- (2) This direction applies to all relevant planning authorities that are responsible for flood prone land within their LGA.

When this direction applies

- (3) This direction applies when a relevant planning authority prepares a planning proposal that creates, removes or alters a zone or a provision that affects flood prone land.

What a relevant planning authority must do if this direction applies

- (4) A planning proposal must include provisions that give effect to and are consistent with the NSW Flood Prone Land Policy and the principles of the *Floodplain Development Manual 2005* (including the *Guideline on Development Controls on Low Flood Risk Areas*).
- (5) A planning proposal must not rezone land within the flood planning areas from Special Use, Special Purpose, Recreation, Rural or Environmental Protection Zones to a Residential, Business, Industrial, Special Use or Special Purpose Zone.
- (6) A planning proposal must not contain provisions that apply to the flood planning areas which:
 - (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 development of that land,
 - (d) are likely to result in a substantially increased requirement for government spending on flood mitigation measures, infrastructure or services, or
 - (e) permit development to be carried out without development consent except for the purposes of agriculture (not including dams, drainage canals, levees, buildings or structures in floodways or high hazard areas), roads or exempt development.
- (7) A planning proposal must not impose flood related development controls above the residential flood planning level for residential development on land, unless a relevant planning authority provides adequate justification for those controls to the satisfaction of the Director-General (or an officer of the Department nominated by the Director-General).
- (8) For the purposes of a planning proposal, a relevant planning authority must not determine a flood planning level that is inconsistent with the *Floodplain Development Manual 2005* (including the *Guideline on Development Controls on Low Flood Risk Areas*) unless a relevant planning authority provides adequate justification for the proposed departure from that Manual to the satisfaction of the Director-General (or an officer of the Department nominated by the Director-General).

Consistency

- (9) A planning proposal may be inconsistent with this direction only if the relevant planning authority can satisfy the Director-General (or an officer of the Department nominated by the Director-General) that:
- (a) the planning proposal is in accordance with a floodplain risk management plan prepared in accordance with the principles and guidelines of the Floodplain Development Manual 2005, or
 - (b) the provisions of the planning proposal that are inconsistent are of minor significance.

Note: "flood planning area", "flood planning level", "flood prone land" and "floodway area" have the same meaning as in the *Floodplain Development Manual 2005*.

Direction 4.3 – issued 1 July 2009

4.4 Planning for Bushfire Protection

Objectives

- (1) The objectives of this direction are:
- (a) to protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and
 - (b) to encourage sound management of bush fire prone areas.

Where this direction applies

- (2) This direction applies to all local government areas in which the responsible Council is required to prepare a bush fire prone land map under section 146 of the *Environmental Planning and Assessment Act 1979* (the EP&A Act), or, until such a map has been certified by the Commissioner of the NSW Rural Fire Service, a map referred to in Schedule 6 of that Act.

When this direction applies

- (3) This direction applies when a relevant planning authority prepares a planning proposal that will affect, or is in proximity to land mapped as bushfire prone land.

What a relevant planning authority must do if this direction applies

- (4) In the preparation of a planning proposal the relevant planning authority must consult with the Commissioner of the NSW Rural Fire Service following receipt of a gateway determination under section 56 of the Act, and prior to undertaking community consultation in satisfaction of section 57 of the Act, and take into account any comments so made,
- (5) A planning proposal must:
- (a) have regard to *Planning for Bushfire Protection 2006*,
 - (b) introduce controls that avoid placing inappropriate developments in hazardous areas, and
 - (c) ensure that bushfire hazard reduction is not prohibited within the APZ.
- (6) A planning proposal must, where development is proposed, comply with the following provisions, as appropriate:
- (a) provide an Asset Protection Zone (APZ) incorporating at a minimum:
 - (i) an Inner Protection Area bounded by a perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property, and
 - (ii) an Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road,
 - (b) for infill development (that is development within an already subdivided area), where an appropriate APZ cannot be achieved, provide for an appropriate performance standard, in consultation with the NSW Rural Fire Service. If the provisions of the planning proposal permit Special Fire Protection Purposes (as defined under section 100B of the *Rural Fires Act 1997*), the APZ provisions must be complied with,
 - (c) contain provisions for two-way access roads which links to perimeter roads and/or to fire trail networks,

1. FLOOD RISK MANAGEMENT IN NSW

1.1 Flood Prone Land Policy

The primary objective of the New South Wales Flood Prone Land Policy, as outlined below, recognises the following two important facts:

- flood prone land is a valuable resource that should not be sterilised by unnecessarily precluding its development; and
- if all development applications and proposals for rezoning of flood prone land are assessed according to rigid and prescriptive criteria, some appropriate proposals may be unreasonably disallowed or restricted, and equally, quite inappropriate proposals may be approved.

1.1.1 The Policy Statement

The primary objective of the policy is to reduce the impact of flooding and flood liability on individual owners and occupiers of flood prone property, and to reduce private and public losses resulting from floods, utilising ecologically positive methods wherever possible. That is:

- a merit approach shall be adopted for all development decisions in the floodplain to take into account social, economic and ecological factors, as well as flooding considerations;
- both mainstream and overland flooding shall be addressed, using the merit approach, in preparation and implementation by councils of strategically generated floodplain risk management plans;
- the impact of flooding and flood liability on existing developed areas identified in floodplain risk management plans shall be reduced by flood mitigation works and measures, including on-going emergency management measures, the raising of houses where appropriate and by development controls; and
- the potential for flood losses in all areas proposed for development or redevelopment shall be contained by the application of ecologically sensitive planning and development controls.

To achieve its primary objective, the policy provides for:

- financial assistance by the NSW Government for works to reduce potential flood damage and personal danger in existing developed areas;
- technical support from the State Government to local councils in ensuring that the management of flood prone land is consistent with flood risk and that such development does not cause undue future distress to individuals nor unduly increase potential flood liability to them or the community;
- emergency management and flood recovery programs and their linkage with the floodplain risk management process; and
- the protection of councils, government agencies, and their staff against claims for damages resulting from their issuing advice or granting approvals on floodplains, providing such action was taken in accordance with the principles and guidelines in this manual.

The policy shall be implemented in the following manner:

- The management of flood prone land is, primarily, the responsibility of councils. In addition, the Department of Infrastructure Planning and Natural Resources (DIPNR) has a lead role in the development of regional strategies and plans under the Environmental Planning and Assessment Act (EP&A Act). Therefore, councils need to be cognisant of regional strategies and plans, when determining standards and implementation arrangements for flood prone land in their service areas.
- The NSW Government, through DIPNR and the State Emergency Service (SES), shall provide specialist technical assistance on all flooding and land use planning matters. This manual is provided to assist councils in the preparation of floodplain risk management plans.

- The establishment of local floodplain risk management committees by councils, through which local community groups and individuals can effectively communicate their aspirations concerning the management of the flooding problem.
- The State Government continuing to subsidise flood risk management studies, works and measures.
- floodway definition to be based on hydraulic, hazard and potential damage considerations related to the effect of loss of flow conveyance on flood conditions, with provision for restricted development depending on circumstances;
- explicit recognition that flood risk management needs to take into account the principles of ecologically sustainable development (ESD) through consideration of relevant government policies and legislation allowing for the sustainable use of the floodplain as a natural resource. Planning and assessment requirements laid down in these policies and legislation must be complied with by all agencies associated with the use, development and management of the floodplain;

1.1.2 Policy Provisions

The policy provides for:

- a flexible merit based approach to be followed by councils, when dealing with development or redevelopment of flood prone land;
- high government priority for flood risk mitigation programs;
- a merit based approach to selection of appropriate flood planning levels (FPLs). This recognises the need to consider the full range of flood sizes, up to and including the probable maximum flood (PMF) and the corresponding risks associated with each flood, whilst noting that with few exceptions, it is neither feasible nor socially or economically justifiable to adopt the PMF as the basis for FPLs. FPLs for typical residential development would generally be based around the 1% AEP flood event plus an appropriate freeboard (typically 0.5m);
- councils to be responsible for the determination of appropriate planning and development controls, including FPLs, to manage future flood risk to an acceptable level based on social, economic and ecological, as well as flooding considerations. These controls should be cognisant of the relevant regional planning and any associated controls;
- an emphasis on the importance of developing and implementing floodplain risk management plans based on an integrated mix of management measures that address existing, future and continuing risk;
- the provision of NSW government technical and financial support to councils in relation to flooding matters;
- recognition of the need to consider ways of maintaining and enhancing riverine and floodplain ecology in the development of floodplain risk management plans;
- recognition of the importance of the continuing flood risk addressed in the State Emergency Service Act 1989 and State Flood Plan, and the close relationship between the emergency management and floodplain risk management processes;
- recognition of the potential implications of climate change on flooding behaviour;
- detailed implementation arrangements as outlined in this manual;
- protection of councils and other public authorities and their staff against claims for damages, providing they act in accordance with the government's policy at the time; and
- relief from land tax, council rates and water and sewerage rates where vacant land cannot be developed because of its flood prone nature.

1.1.3 Enquiries

Enquiries should be directed as follows:

- general enquiries on the policy, its currency, and implementation to DIPNR;
- enquiries on flood liability of individual properties and proposals for development should be directed to the relevant council; and

- enquiries on flood warning, evacuation and community education matters should be directed to the SES.

1.2 Purpose of the Manual

The manual supports the NSW Government's Flood Prone Land Policy in providing for the development of sustainable strategies for managing human occupation and use of the floodplain considering the risk management principles outlined in Appendix B. These are based upon a hierarchy of avoidance, minimisation (using planning controls) and mitigation works.

This manual provides councils with a framework for implementing the policy to achieve its primary objective. It considers the costs and benefits of floodplain occupation in full recognition that associated management decisions need to consider broader issues in an integrated approach.

This manual updates the 2001 Floodplain Management Manual to reflect the significant change in the roles of State Agencies and to clarify some planning issues which have led to inconsistent interpretations. It replaces the 1986 Floodplain Development Manual as the Government's manual relating to the management of flood liable land in accordance with Section 733 of the Local Government Act 1993. This provides councils and statutory authorities, and their staff, with indemnity for decisions made and information provided in good faith from the outcomes of the management process.

The manual also presents general principles and a process for floodplain risk management to enable councils and their floodplain risk management committees to understand flood behaviour and impacts. It provides for evaluation of strategies and formulation of plans that achieve effective floodplain risk management outcomes accounting for social, economic, ecological and cultural factors, together with community aspirations for the use of flood prone land. This provides for sustainable use and development of the floodplain in a wise and rational manner on a flexible merit basis.

1.3 Who is the Manual for?

The Manual is written principally for local government, including councillors, senior

managers, engineers, planners, environment officers, development assessors, reserve managers and others. However, the manual will also be of interest to other organisations and individuals involved in floodplain risk management such as government agencies, landholders, community groups and consultants.

1.4 Where does the Manual Apply?

The manual applies to floodplains across NSW, in both urban and rural areas. It is also used to manage major drainage issues in local overland flooding areas. As the 1986 manual was directed principally to mainstream flooding in urban areas Appendix C provides more details on the application of the manual to rural and local overland flooding.

1.5 How to Use the Manual

The manual is to be read and interpreted in a global sense with reference to the overall objectives of the policy, with particular reference to the primary objective.

The manual and policy are targeted at a strategic management level. To ensure that the underlying philosophies are applied in each case, without exception, individual portions or sections of the manual should not be interpreted outside:

- the overall philosophy of the manual and its application of strategic management; and
- the policy, as outlined in Section 1.1.

In the case of any inconsistency the main body of the manual takes precedence over the appendices.

The manual is broken down into sections as follows:

- Section 1 outlines the policy, the role of the manual in policy interpretation, and the principles and objectives of floodplain risk management;
- Section 2 describes the floodplain risk management process;
- Section 3 deals with the roles and responsibilities of participants in floodplain risk management; and
- Section 4 provides a glossary of terms used.

Appendices support the text in implementing the management process. Key appendices include:

- Appendix A discusses the history of policy development, improvements on previous manuals, and the cost of flooding in NSW;
- Appendix B provides a background on risk management;
- Appendix C outlines the floodplain risk management process, as shown in Figure 2.1, and references other relevant appendices;
- Appendix D discusses the need for, and role and make up of management committees;
- Appendix E outlines the necessary data and its collection;
- Appendix F outlines flood study preparation;
- Appendix G discusses issues addressed in, and preparation of, a floodplain risk management study;
- Appendix H discusses preparation and formalisation of a floodplain risk management plan;
- Appendix I discusses management plan implementation;
- Appendix J discusses floodplain risk management options;
- Appendix K discusses derivation of flood planning levels;
- Appendix L outlines hazard and hydraulic categorisation;
- Appendix M discussed flood damages; and
- Appendix N discusses emergency response planning for floods.



PLATE 1 - South Murwillumbah, 1954

4

1.6 Effective Floodplain Risk Management

Floodplain risk management specifically considers the consequences of flooding as they relate to human occupation of the floodplain. The policy and manual focus on this risk whilst recognising that natural resource management policies and legislation need consideration by all agencies managing floodplain development and use.

The policy and manual use a broad risk management hierarchy of avoidance, minimisation and mitigation, as discussed in Appendix B, to:

- reduce the social and financial costs from the risks associated with occupying the floodplain;
- increase the sustainable benefits of using the floodplain; and
- improve or maintain floodplain ecosystems dependent on flood inundation.

The most effective means of achieving sound flood risk management outcomes is to formulate and implement management plans through the floodplain risk management process, discussed in Section 2.

The process enables decisions to be made on a balanced consideration of economic, social and environmental issues from a flood risk management perspective so as to achieve effective robust outcomes in an informed and consultative manner.

Management plans need to be specific to individual floodplain and specific locations within the floodplain due to variation in flood hazard, exposure and vulnerability.

Balanced management plans must address each of the three types of flood risk, discussed below, in a comprehensive manner and evaluate all factors (including social, economic, ecological and cultural impacts and flood risk) that affect the use of flood prone land. The three types of flood risk are:

- **existing flood risk**, associated with current development on flood prone land. For example, this may be the risk to existing development areas that can be effectively managed by the construction of a levee;

- **future flood risk**, associated with any new development on flood prone land. For example, this may be the risk to future development areas that can be managed by adopting appropriate development limits, and minimum fill levels for lots and minimum floor levels for buildings; and
- **continuing flood risk**, is the risk remaining, in both existing and future development areas, after floodplain risk management measures, such as works and planning controls, are implemented. This is the risk from rarer floods which may result in levee overtopping or flooding of buildings with minimum floor levels. The consequences of these rarer floods may include danger to personal safety and damages to infrastructure, and both public and private property.
- consideration of future development scenarios for a reasonable timeframe (say 20 years). Considering only existing planning or development scenarios cannot generally account for this future growth;
- cumulative assessment of decisions relating to mitigation works and measures, future development and environmental consequences on a long term strategic basis; and
- accounting for future growth in the numbers of occupants in the floodplain. Such growth increases the pressure on response and recovery agencies should an emergency occur.

A balanced management plan therefore requires a range of different management measures. These measures (including both works and planning controls) and their cumulative impacts, need to be considered strategically. This involves:

Incorporating future land use elements of management plans into Environmental Planning Instruments (EPIs) and development control plans and policies will facilitate effective management of the floodplain.

Case-by-case decision making cannot account for the cumulative impacts on flood behaviour and risks, caused by individual developments or works. This form of ad hoc assessment contravenes the principles of the manual.



*PLATE 2 - Nyngan, 1990
(Continuing Flood Risk - Floodplain Risk Management Measures Overwhelmed)*



Our Ref: L.B17123.022_Teven_Rd.docx

13 April 2015

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Attention: Paul Busmanis

Dear Paul

**RE: REVISED FLOOD ADVICE FOR THE PROPOSED TEVEN ROAD TRANSPORTATION
PRECINCT AT WEST BALLINA**

We have prepared this letter in response to your e-mail dated 5 November 2014 requesting assessment of flood impacts associated with the proposed Teven Road Transportation Precinct at West Ballina and subsequent discussions and meetings with Council and NDC Surveyors. The site is shown in Figure 1 below. The brown and blue hatched area represents the development site. Contained in this letter is a summary of flood impacts associated with the proposed filling of the site.



Figure 1 Teven Road Transportation Precinct

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A part of BMT in Energy and Environment

Site Location and Background

The subject site is located between the Pacific Highway (Ballina Bypass) and Teven Road at West Ballina. The site covers the following properties:

- Lot 3 on DP 749680
- Lot 2 on DP 749680
- Lot 5 on DP 1031875
- Lot 229 on DP 1121079 (part)
- Lot 228 on DP 1121079 (part)
- Lot 228 on DP 1121079
- Lot 12 on DP 1011575 (part)

Various flood impact assessments have previously been undertaken for these sites, as surplus material has been made available from the construction of the Ballina Bypass. The flood impact assessments have generally comprised qualitative analyses of expected flood impacts due to minor filling. The low level filling previously assessed has only affected the flood storage, thus has caused minor increases to peak flood levels. Only partial filling of Lots 228 and 229 on DP 1121079 has previously been recommended to ensure the adjacent Ballina Bypass flood relief bridge is not blocked.

Scenarios Assessed

For this assessment, two fill scenarios have been considered:

- complete filling to the specified minimum fill level of 2.7m AHD (brown and blue areas in Figure 1).
- partial filling to the minimum fill level of 2.7m (brown area in Figure 1) with the remainder of the site filled to the 5 year ARI flood level of 1.2m AHD (blue area in Figure 1). The lower level areas would be used for parking and truck manoeuvring.

Both scenarios include partial filling of the properties adjacent to the flood relief bridge to maintain connectivity of the floodplain on each side of the Ballina Bypass. Following the preliminary assessment, the question was raised in relation to how flood impacts may vary if and when the West Ballina Flood Relief culverts (under River Street) are implemented. Therefore, the above two fill scenarios have been simulated for the following WBRF scenarios:

- no West Ballina Flood Relief;
- 2 cells of the WBFR culverts; and
- 3 cells of the WBFR culverts.

The following 5 scenarios have, therefore, been assessed:

- Scenario 1: Complete site filling to 2.7m AHD with no WBFR
- Scenario 2: Complete site filling to 2.7m AHD with 2 cells of the WBFR
- Scenario 3: Complete site filling to 2.7m AHD with 3 cells of the WBFR
- Scenario 4: Multi-level filling with 2 cells of the WBFR
- Scenario 5: Multi-level filling with 3 cells of the WBFR

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Flood Modelling

Hydraulically, the site is located on the Emigrant Creek / Lower Richmond River floodplain. The dominant sources of flooding in this part of the floodplain are from the Richmond River and local catchment runoff (Emigrant and Maguires Creeks). Most of the site is categorised as a flood storage zone, as floodwaters are generally deep and slow moving. However, there is a flood conveyance zone between Teven Road and the Ballina Bypass flood relief bridge.

Simulations have been undertaken using Ballina Shire Council's 'Integrated Flood Model'. As per typical flood impact assessments, the 20 year and 100 year ARI flood events have been assessed. Due to the location, only two sources of flooding have been assessed; Richmond River and local catchment. The results of the simulations have been merged, to produce a single peak flood level surface representing the maximum of the two sources of flooding. This 'envelope' of peak flood levels has been used for the impact assessment by comparing post development and pre development scenarios.

Flood Impacts due to Complete Site Filling

Peak flood level impacts for Scenario 1 are shown on Map 1 for the 20 year ARI event. The mapping shows that during the 20 year ARI event, there is a large area (approximately 4.9km²) that will experience an increase in peak flood levels of between 5mm and 25mm. For most of this area, afflux does not exceed 6mm, although the area to the north of the site (on the western side of the Ballina Bypass) afflux is up to 10mm. During the 20 year ARI event, increases of greater than 5mm are generally experienced on the eastern side of the Ballina Bypass.

Peak flood level impacts for Scenario 1 are shown on Map 2 for the 100 year ARI event. The mapping shows that during the 100 year ARI event, there is a large area (approximately 5.4km²) that will experience an increase in peak flood levels of between 5mm and 25mm. For most of this area, afflux does not exceed 10mm. During the 100 year ARI event, increases of greater than 5mm are generally on the western side of the Ballina Bypass (opposite side from the 20 year ARI event impacts). To provide context to the 10mm afflux shown to the west of the site, Map 7 is included, showing the cumulative impacts associated with floodplain development. The impacts shown on Map 7 exclude the Teven Road Transportation Precinct site impacts.

Scenario 1 (Map 2), Scenario 2 (Map 3) and Scenario 3 (Map 4) can be compared to assess whether the impacts vary according to whether the WBFR is excluded from the assessment, or whether it is included as 2 cells (interim configuration), or 3 cells (ultimate configuration). Comparison between these scenarios shows minimal difference.

At Cumbalum, peak flood levels for the complete site filling scenarios increase by 2mm and 3mm during the 20 year and 100 year ARI events respectively. On the private land to the west of the Ballina Bypass, increases are less than 1mm.

Mitigation Scenario

The afflux is attributed to:

- Significant reduction in flood storage area due to the large area of filling; and
- Reduction in flood conveyance from one side of the Ballina Bypass to the other due to filling around the flood relief bridges.

Since publication of the Ballina Flood Study Update (BMT WBM, 2008), the impacts of infrastructure and land development projects have been considered on a cumulative basis. Council's policy is for a

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maximum impact of 50mm during a 100 year ARI event, when considering all floodplain development. With several projects already having been implemented, including the Ballina Bypass, the cumulative impact at Cumbalum has reached the maximum threshold. Therefore, to comply with the policy and to protect the community, subsequent development must result in a zero impact at Cumbalum.

To mitigate the impacts of this proposed development (both at Cumbalum and to the west of the site), two options were suggested following the preliminary assessment:

- Reduction in development footprint (to maintain flood storage zone); and/or
- Shaping of development footprint, especially around the flood relief bridge to maximise efficiency of the flood relief bridge).

As noted above, a multi-level fill scenario has been assessed with 60% of the site filled to the minimum fill level of 2.7m AHD, with the remainder of the site left at a lower level of 1.2m, being equivalent to the 5 year ARI flood level.

Peak flood level impacts for Scenario 4 (2 cell WBFR) and Scenario 5 (3 cell WBFR) are shown on Map 5 and Map 6 respectively for the 100 year ARI event. The mapping shows that during the 100 year ARI event, there is a small area that will experience an increase in peak flood levels of between 5mm and 25mm. During the 100 year ARI event, increases of greater than 5mm are generally on the western side of the Ballina Bypass. Again, there is minimal difference between the 2 cell and 3 cell WBFR scenarios. At Cumbalum, peak flood levels increase by 2mm on the eastern side of the Ballina Bypass and less than 1mm on the western side.

Emergency Management

The option discussed here for filling parking facilities to the 5 year ARI should be considered by Council on a 'merits' based approach in accordance with the NSW Floodplain Development Manual (2005). Use of the lower level parking facilities fulfils the objective for maintaining flood storage, however, comes at the cost of flood immunity. To compensate for the reduced flood immunity, certain additional emergency management measures must be considered by the developer.

Should the multi-level filling scenario be adopted for this development, consideration should be given to the following in relation to emergency management of the site:

- Emergency Action Plans should be prepared and actioned when flooding is expected. This should involve monitoring rainfall and creek / river levels, including monitoring BoM Flood Watches and Flood Warnings. A similar approach was adopted by the Ballina Bypass Alliance for construction of the road embankment. An Emergency Action Plan was developed, which included the following:
 - Identification of roles and responsibilities
 - Monitoring of rainfall and river levels
 - Evacuation management planning
- Consideration should be given to evacuation, particularly from the northern part of the site. The aerial survey used for the flood modelling and terrestrial survey provided by Council indicates Teven Road to be higher than the 5 year ARI flood level assigned to the parking area, so this will support effective evacuation.
- Detailed modelling should be undertaken to establish the lead time expected for flash flood scenarios. This shall include identification of hydrologic thresholds (rainfall depths / times and water level) that will trigger the flood action process.

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Should you require any additional information or wish to discuss the contents of this letter, please do not hesitate to contact the undersigned on 07 3831 6744.

Yours faithfully

BMT WBM Pty Ltd



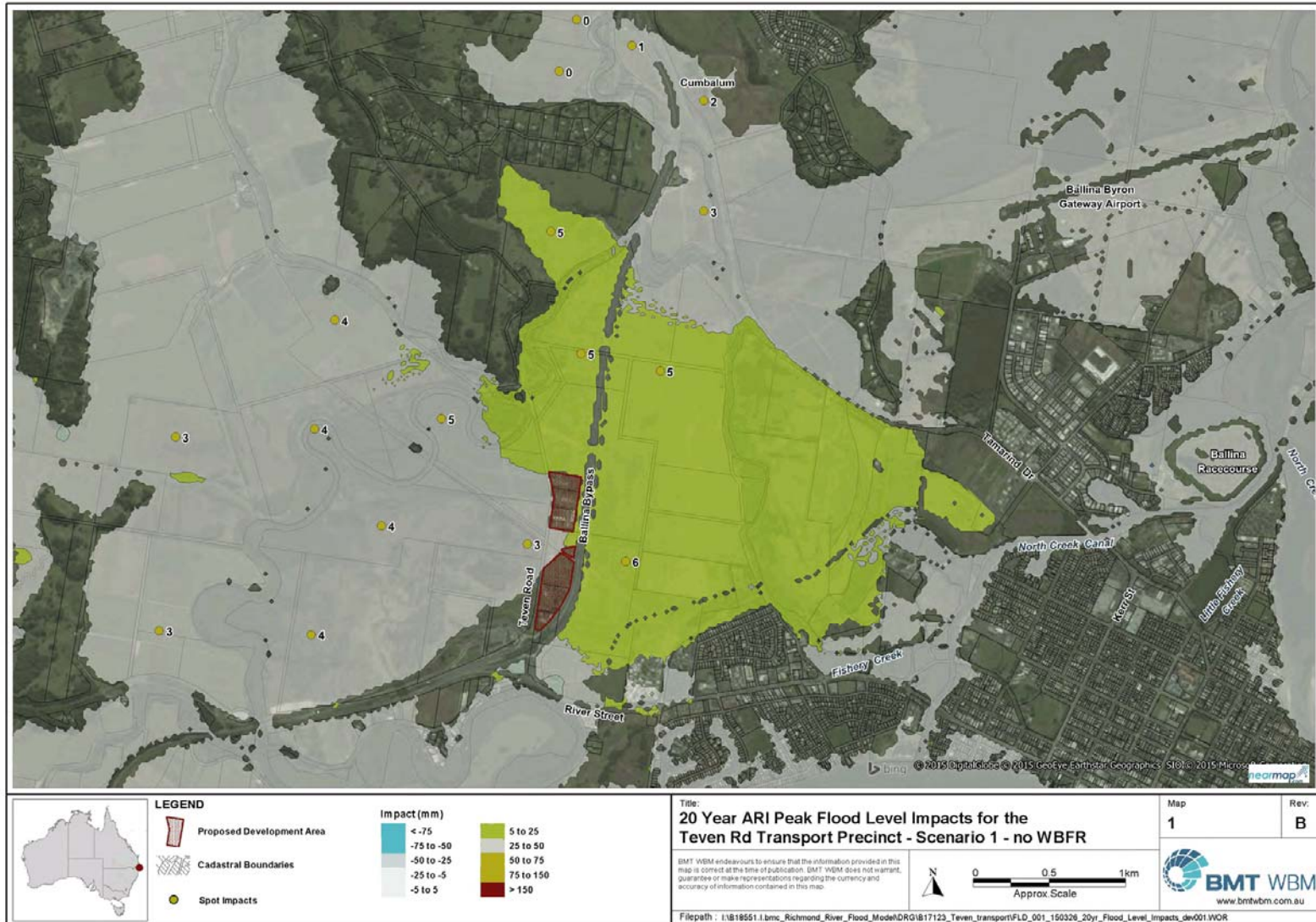
Ben Caddis

Associate, Senior Flood Engineer

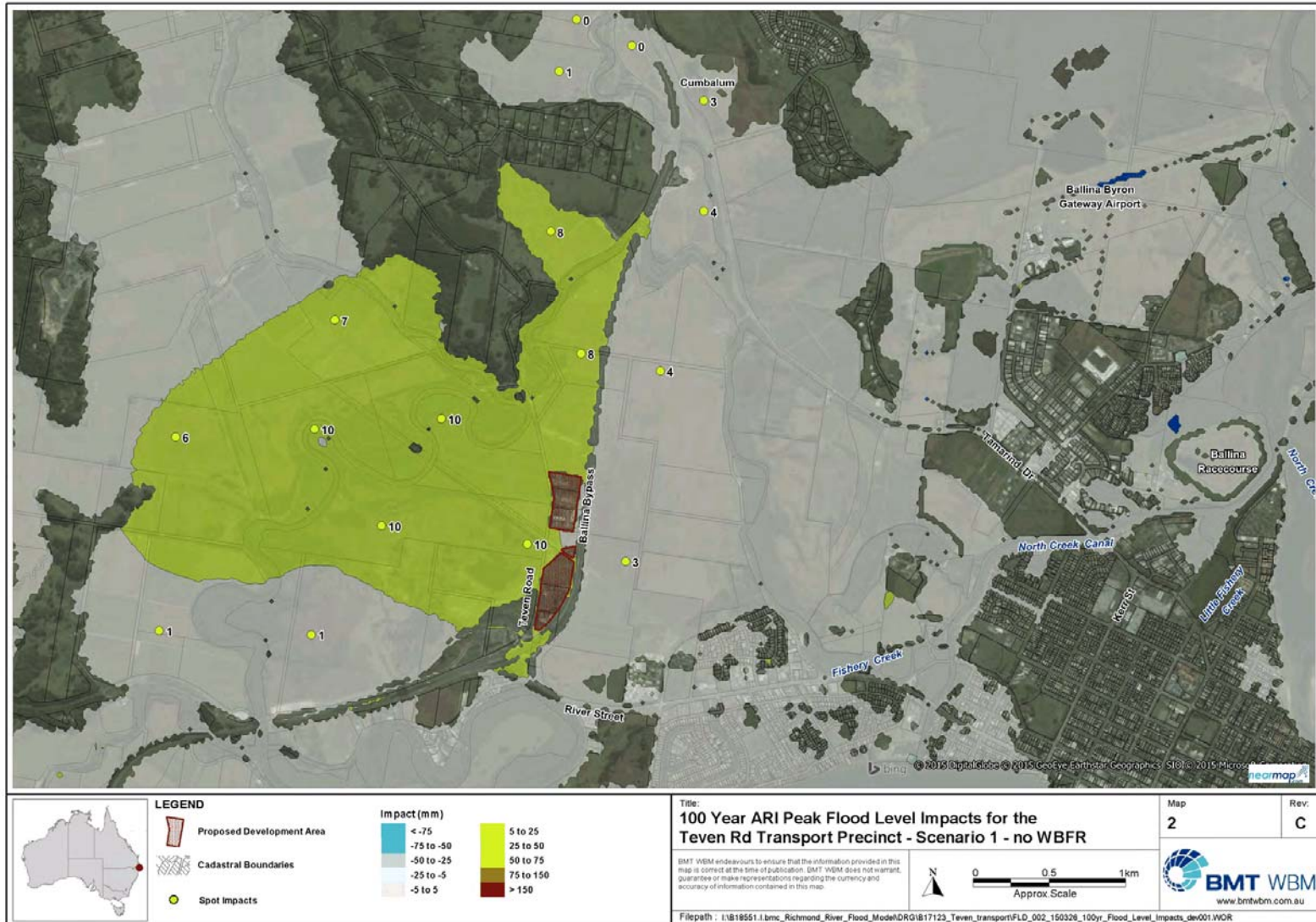
cc Toong Chin and Phillip Buchanan (NSW Office of Environment and Heritage)

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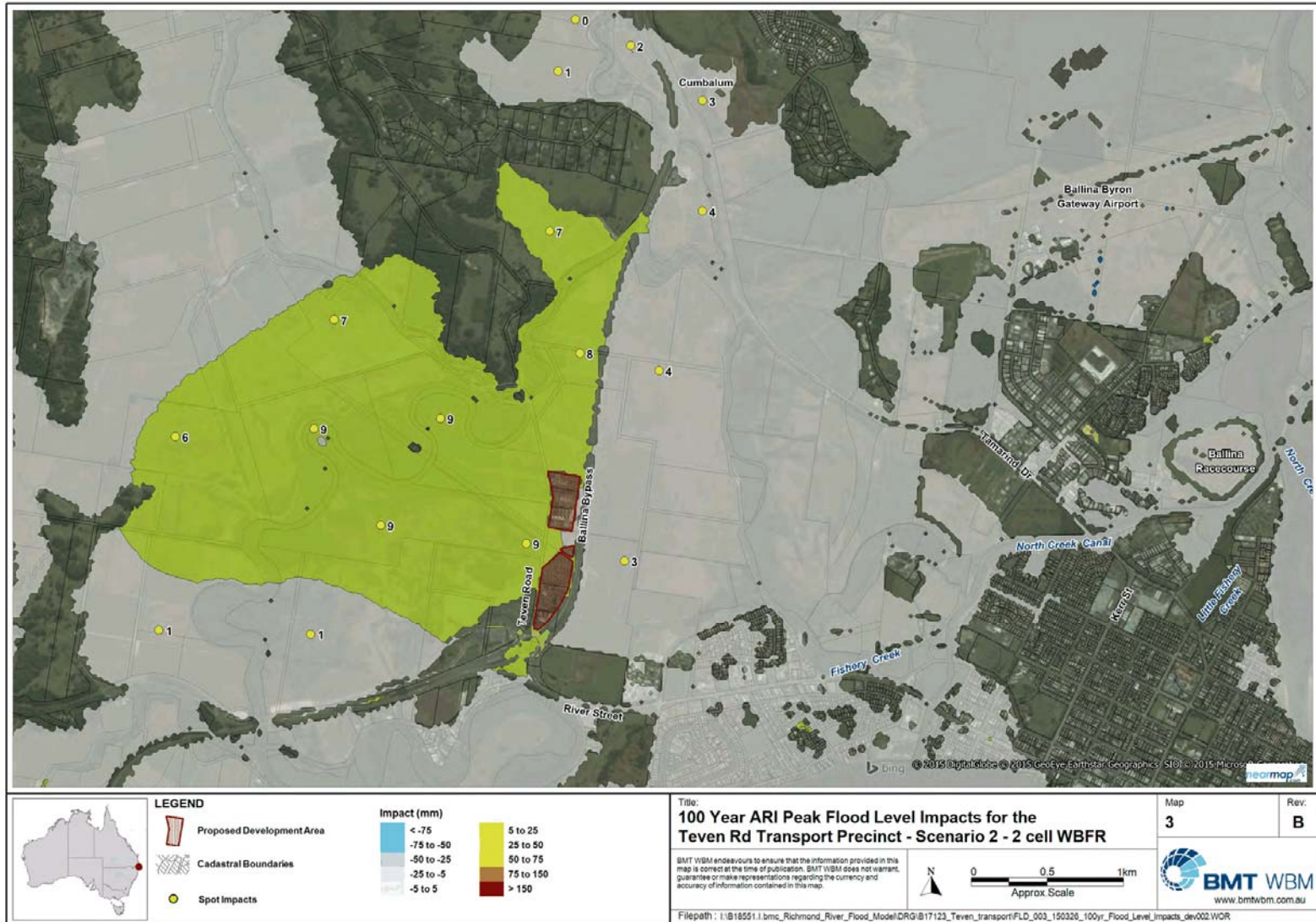
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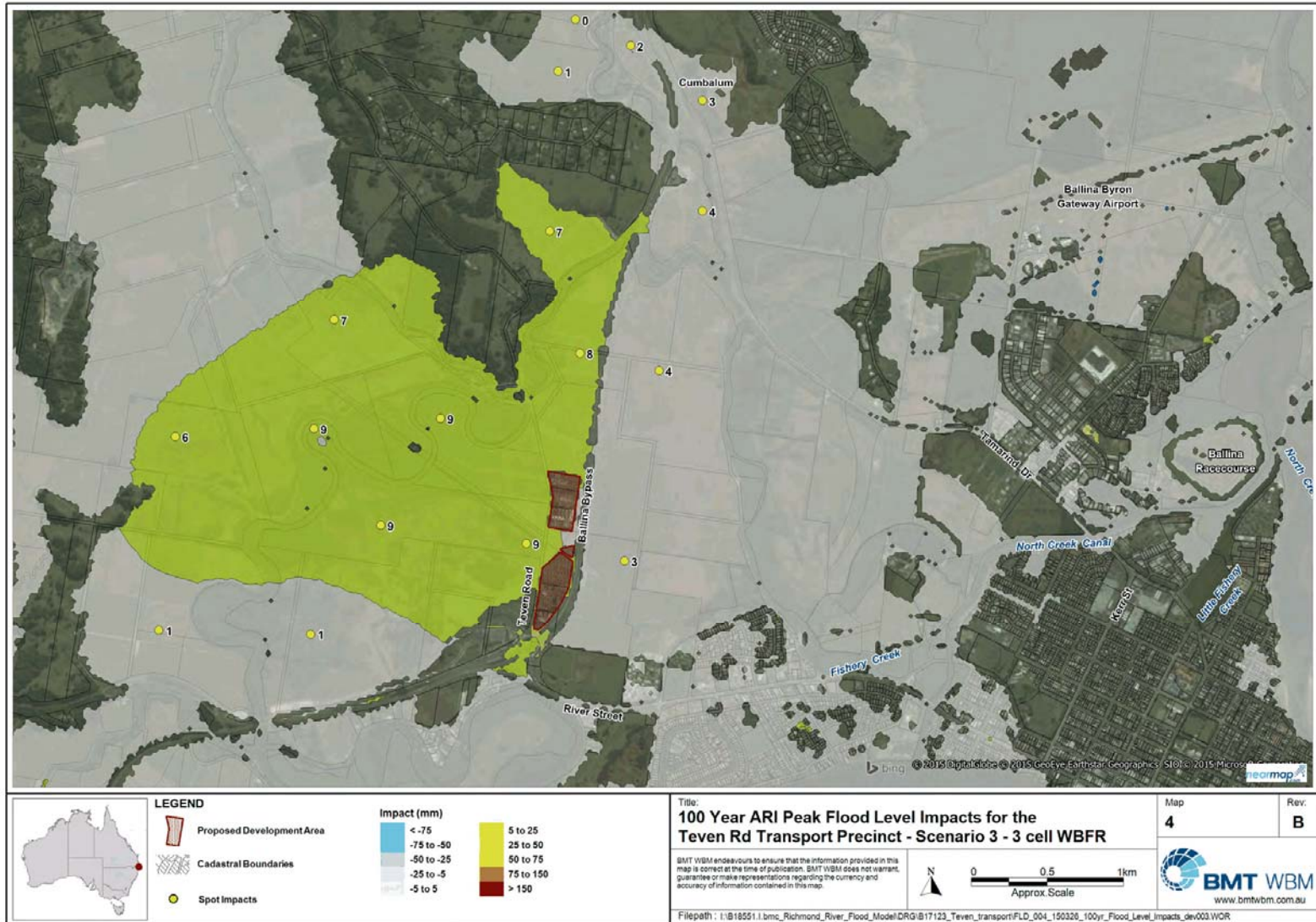
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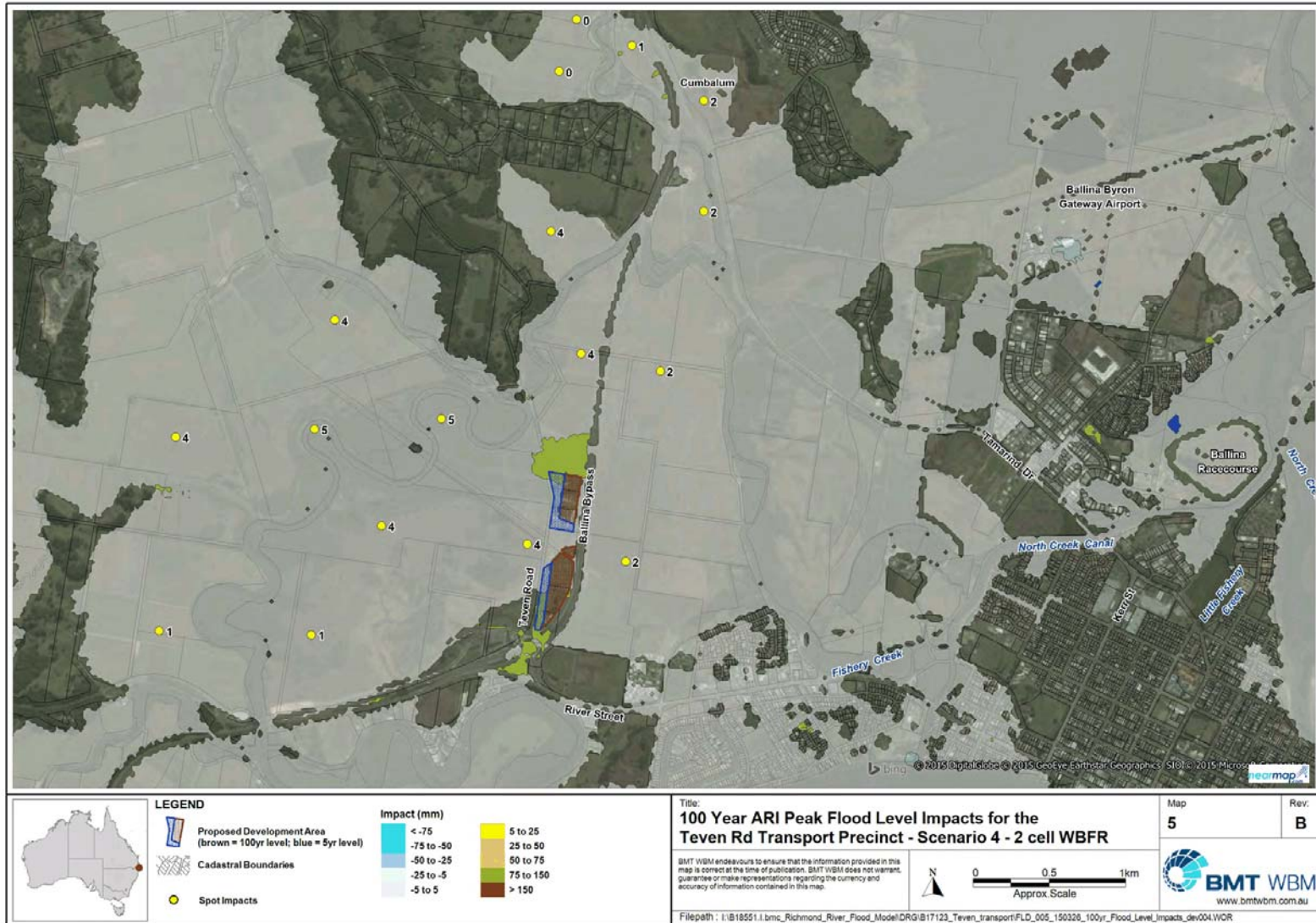
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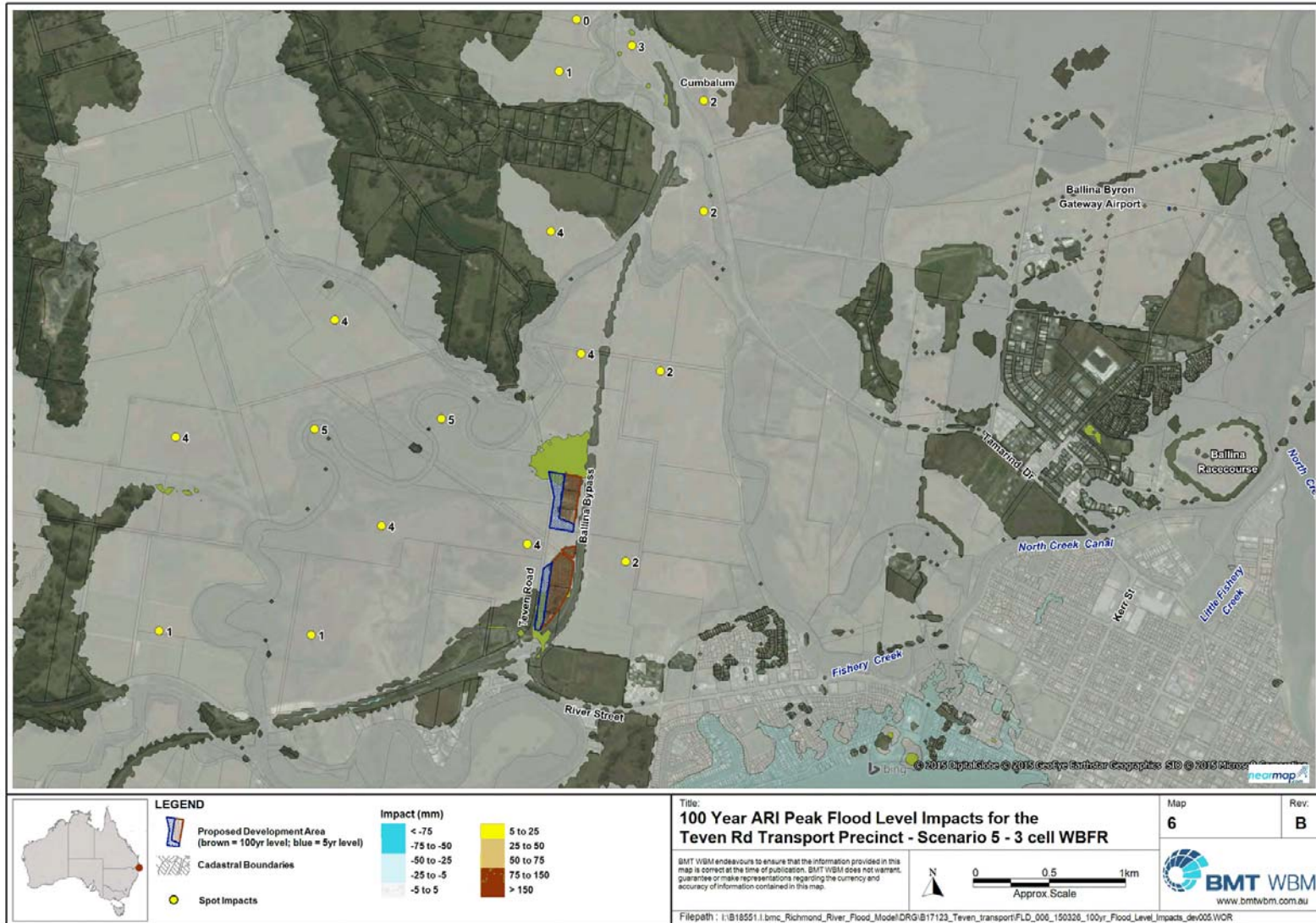
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