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Planning Report

Application for Development Permit for Preliminary Approval to Override the Planning Scheme for Use Rights Associated with the Residential 1 Planning Area and Reconfiguration of a Lot (1 into 19), over Land at 46-62 Front Street, Mossman, described as Lot 12 on SP252360.

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Report Number: 14-20/R000112
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Summary

This Planning Report has been prepared by Planning Plus Pty Ltd on behalf of NV & JS Pty Ltd ("The Applicant") in support of an application to Douglas Shire Council seeking a Development Permit for:

- Preliminary Approval to override the Planning Scheme for use rights associated with the Residential 1 Planning Area; and
- Reconfiguration of a Lot (1 lot into 19).

The proposed development is to be located over land at 46-62 Front Street, Mossman, legally described as Lot 12 on SP252360.

The proposed development is 'assessable development' as defined in Schedule 3 of the *Sustainable Planning Regulations 2009* and thus requires assessment against local Planning Scheme provisions and relevant State legislation. This report provides an overview of the development proposed by the applicant and addresses the various planning considerations relevant to Council's assessment of the proposal.

In summary, the report concludes that:

- The submitted information conforms to the requirements for making a 'impact-assessable' development application under the Sustainable Planning Act 2009;
- The proposed development generally achieves the intent of the Douglas Shire Planning Scheme and relevant State legislation, and where relaxations against relevant technical planning provisions are sought, adequate justification is provided; and
- The proposed development is not likely to result in any significant detrimental impacts that cannot be managed via the imposition of reasonable and relevant conditions of approval.

In light of the above, we present the application for Council's favourable consideration.

1.0 Site Information

1.1 Site Details

The subject site is legally described as Lot 12 on SP252360, and is located at 46-62 Front Street, Mossman, which has direct access from Crawford Street. A Google Globe Aerial Overlay of the site is included for reference as **Figure 1**.

The site covers a total area of 36,380m^2 (3.638ha) and is currently unimproved with cultivated regrowth sugar cane over the site. The site is generally flat with downward slopes located at the eastern boundary. The site is mostly clear of any significant vegetation, although a Minor Perennial Watercourse containing Category A or B vegetation exists along Parker Creek which forms the eastern boundary of the lot (Refer to **Annexure 5** & **Annexure 6**, respectively). This will be addressed further in the report.

The site is located towards the south-east of the Mossman township and is adjacent to Mossman State High School. The site is in close proximity to a wide range of uses including residential complexes, commercial activities and major community facilities such as the 'Town and Country Shopping Centre'. To the east of the site is a creek known as 'Parker Creek' and several sugar cane farms.

The subject site is connected or is capable of being connected to the following infrastructure systems to enable the development to proceed:

- Reticulated water;
- Reticulated sewerage;
- Reticulated electricity;
- Telecommunications; and
- Local road network.

1.2 Planning Context

The planning context of the site is summarised as follows:

Regional Plan:	Urban Footprint.
Planning Locality:	Mossman & Environs Locality.
Planning Area:	Community and Recreational Facilities.
Overlays:	High Scale Plot Ratio; Acid Sulfate Soils; and Low – Medium Risk Bushfire.

2.0 Application Details

Applicant:	NV & JS Pty Ltd
Registered Owners:	NV & JS Pty Ltd Refer to Title Search (**Annexure 2**)
Contact:	Claire Simmons C/- Planning Plus Pty Ltd PO Box 8046 CAIRNS QLD 4870 M: 0401 085 438
Real Property Description:	Lot 12 on SP252360
Location:	Front Street, Mossman QLD 4873
Tenure:	Freehold
Total Area:	36,380m^2 (3.638ha)
Local Government Authority:	Douglas Shire Council.
Contaminated Land or Environmental Management Registers:	Nil.
Easements and Encumbrances:	Easement No 602824361.
Proposal:	Development Permit for Preliminary Approval to Override the Planning Scheme for use rights associated with the Residential 1 Planning Area and a Reconfiguration of a Lot (1 into 19).
Our Reference:	14-20/000112

3.0 Proposal

This application seeks a Development Permit for Reconfiguration of a Lot (1 into 19) and Preliminary Approval to override the Planning Scheme to the Residential 1 Planning Area, as defined by the Douglas Shire Council Planning Scheme.

A plan of the proposed Lot Layout and Contour Plan has been prepared by RPS Cairns Pty Ltd, and is provided as **Figure 2**.

A summary of the main elements of the proposed development is provided as follows:

- 19 lots ranging between 1,000m^2 and 1,835m^2 in size;
- Internal park area including BBQ facilities and a playground, and a walking track along the boundary between Parker Creek and the subject site, equalling 5,745m^2 of open space contributions; and
- A buffer of 10 metres between Parker Creek and the subject site.

Vehicular access to the site is proposed via Crawford Street, which links with William Street. The extension of Crawford Street to gain access to the lots will be located down the centre of the site, with an open space area in the centre of the site including parkland, playground and BBQ facilities (Refer to **Figure 2**).

The proposed development will retain significant open space along the Parker Creek corridor, and will provide a public walking tracks and recreational access along the boundary of the site. In addition, the proposed development will provide a 1,251m^2 internal park area developed with a playground and BBQ to encourage community and recreational facilities for public use.

The proposed development is intended to cater for an array of purchasers, with design and marketing of the site based on the current non-existent supply of large vacant land parcels within Mossman. Design features and characteristics are intended to reflect the unique environmental surroundings of Mossman and ensure walkability to the town centre, whilst providing larger lot sizes to attract purchasers who are generally older retired farmers or people seeking larger land parcels close to town.

Overall, the proposal is considered to represent an efficient and appropriate use of the site and will achieve an aesthetically pleasing built form to complement the surrounding locality.

4.0 Legislative Requirements

4.1 Sustainable Planning Act 2009 (SPA)

This section provides an overview of the legislative context of the application under the provisions of the *Sustainable Planning Act 2009*.

4.1.1 Assessable Development

The proposed development is identified as 'assessable' under the *Sustainable Planning Act 2009* due to the effect of the Douglas Shire Planning Scheme.

4.1.2 Assessment Manager

The Assessment Manager for this development application is Douglas Shire Council as determined by Schedule 6 of the *Sustainable Planning Regulations 2009*.

4.1.3 Level of Assessment

Levels of Assessment for the proposed Preliminary Approval and Reconfiguration of a Lot are outlined in the below table.

Table 1 Level of Assessment

Planning Scheme Planning Area	Defined Land Use	Level of Assessment
Community and Recreational Facilities	Preliminary Approval to Override the Planning Scheme for use rights associated with the Residential 1 Planning Area	Impact
Community and Recreational Facilities	Reconfiguration of a Lot	Code

4.1.4 Referral Agencies

A review of Schedule 7 of the *Sustainable Planning Regulations* indicates that the application will not trigger referral to State Agencies.

4.1.5 Public Notification

This application requires public notification pursuant to Section 295 of the *Sustainable Planning Act 2009* as it is subject to 'Impact Assessment'. A period of 15 business days will apply in this instance.

5.0 Statutory Planning Assessment

5.1 Overview

This section provides an assessment of the application against relevant statutory planning provisions.

5.2 State Planning Regulatory Provisions

No State Planning Regulatory Provisions are relevant to this application.

5.3 State Planning Policy

The State Planning Policy is relevant to the assessment of this application where a state interest is not appropriately reflected in the Planning Scheme relevant to the site. 'Part E: Interim development assessment requirements' outlines the state interests and associated assessment requirements which are to be considered in relation to certain development applications. An assessment of the subject application against Part E is provided in the following.

Liveable Communities	Not applicable.
Mining and Extractive Resources	Not applicable.
Biodiversity	Applicable. The proposed development contains Category B 'endangered regional ecosystem' vegetation along the border of the site. The proposed development will include necessary measures to ensure appropriate protection and mitigation measures on the site, and compliance with all relative Planning Scheme requirements.
Coastal Environment	Not applicable.
Water Quality	The proposed development will include necessary measures to ensure appropriate management of stormwater quality and Acid Sulfate Soils.
Emissions and Hazardous Activities	Not applicable.
Natural Hazards	Applicable.

	The site is located within a low-medium Bushfire Hazard Area under the Douglas Shire Planning Scheme and complies with the DEO's and specific code requirements within the Planning Scheme. The site is identified as being subject to flood inundation as per **Annexure 7**. The proposal is mostly compliant with Q100 Flood Immunity as per the Douglas Shire Council Planning Scheme requirements and where it is not compliant, adequate fill (to Q100 level) is proposed in the design phase of development.
State Transport Infrastructure	Not Applicable.
Strategic Airports and Aviation Facilities	Not Applicable.

5.4 Regional Plan

The Far North Queensland Regional Plan 2009-2031 identifies the subject site as being within the 'Urban Footprint'. The proposal is considered to be consistent with the intent of the 'Urban Footprint' and with the broader objectives of the plan which seek to promote increased residential densities and associated infrastructure efficiencies through a compact urban form.

5.5 State Development Assessment Provisions (SDAP)

No State Development Assessment Provisions are identified as being applicable to the proposal.

5.6 Douglas Shire Council Planning Scheme

5.6.1 Desired Environmental Outcomes

We note that the proposed development involves 'Impact Assessable' development, thereby necessitating an assessment against higher-order elements of the Planning Scheme, including Desired Environmental Outcomes.

5.6.1.1. Ecological Processes and Natural Systems

5.6.1.1.1. Desired Environmental Outcome 1

The unique environmental values of the Shire, which result from its location within the Wet Tropics Bioregion, are maintained and protected for current and future generations.

Comment

The design of the proposed development recognises the importance of maintaining and protecting the unique environmental values of the Shire. A 10 metre buffer from Parker Creek and associated riparian vegetation is included in the design to avoid any risk of the development impacting on the natural ecosystem, and this complies with the Planning Scheme requirements.

The proposed development acknowledges the value of the Shire's unique environmental characteristics through the creation of open space areas and a walking track along the eastern boundary. The intent is to provide the community with the opportunity to appreciate the aesthetics of the immediate surroundings, and give appreciation to the unique environmental values which surround the township and abroad. The design measures support inter-generational equity by encouraging the continued protection and maintenance of the natural environment for current and future generations. The proposed development does not compromise the achievement of the desired environmental outcome.

5.6.1.1.2. Desired Environmental Outcome 2

Those parts of the Shire located within the Wet Tropics and Great Barrier Reef World Heritage Areas and other adjacent areas of environmental value and ecological significance, are preserved and protected for natural conservation, landscape/scenic quality, Biodiversity and habitat values, in particular the protection of the Southern Cassowary and its habitat and to ensure the integrity of natural processes.

Comment

The site is not located in the Wet Tropics or Great Barrier Reef World Heritage Areas. However, the proposed development acknowledges the value of Mossman's ecological significance through the creation of open space areas and a walking track along the eastern boundary, providing sufficient development buffers. These design characteristics provide the community with the opportunity to appreciate the aesthetics of the immediate surroundings, whilst protecting the natural environment and landscape values, and ensuring the continued integrity of natural processes around the township and abroad. The proposed development does not compromise the achievement of the desired environmental outcome.

5.6.1.1.3. Desired Environmental Outcome 3

Natural waterways such as the Daintree River, the Mossman River, the Mowbray River and Dicksons Inlet, all wetlands but particularly those on the Directory of Wetlands of Importance in Australia, being the Lower Daintree River, Alexandra Bay and the Hilda Creek Headwater; and all catchments located in coastal areas within the Shire, are managed to protect their ecological processes, enhance water quality, conserve riparian ecological values and landscape/scenic quality, while acknowledging nature based recreation opportunities.

Comment

Parker Creek runs along the eastern boundary of the site and connects to the South Mossman River approximately 1.68 kilometres north-east of the site. The proposed development will not create any detrimental impacts on the waterway. No riparian vegetation is proposed to be removed. In addition, the creation of larger lot sizes ensures houses are generally located further away from the waterway, decreasing potential impacts. The creation of open space areas and a walking track along

the eastern boundary of the site provides a further development buffer, and creates a nature based recreation opportunity for the community. The proposed development does not compromise the achievement of the desired environmental outcome.

5.6.1.1.4. Desired Environmental Outcome 4

The unique environmental character of the Shire comprised of internationally renowned landscapes, ecologically significant rainforest systems, sensitive coastal systems and areas of unsurpassed natural beauty, are maintained in association with sustainable development practices, which seek to minimise the effects of development on the natural environment.

Comment

No clearing or removal of vegetation is required for the proposed development. The location and design of the proposed development recognises the importance of maintaining and protecting areas of unique environmental character. A 10 metre buffer from Parker Creek and associated riparian vegetation on the eastern boundary is included in the design to avoid any risk of negative effects of development on the natural environment. The proposed development does not compromise the achievement of the desired environmental outcome.

5.6.1.2. Economic Development

5.6.1.2.1. Desired Environmental Outcome 5

A prosperous community with a strong rural sector, a dynamic tourism industry and commercial and industrial activities offering a diverse range of employment opportunities, is supported by the sustainable use and management of the natural resources of the Shire.

Comment

The proposed development will not have a direct or negative impact on the rural, tourism, commercial or industrial activities of Mossman. The natural resources of the Shire will not be affected by the proposed development.

5.6.1.2.2. Desired Environmental Outcome 6

The natural resources of the Shire, such as GQAL, extractive resources, water and forestry resources are protected and managed in a manner that ensures their ecological and economic values are assured for present and future generations.

Comment

The proposed development is located within the 'Urban Footprint of the Far North Queensland Regional Plan and therefore is not considered to be of GQAL value. Therefore, the natural resources of the Shire will not be affected by the proposed development.

5.6.1.2.3. Desired Environmental Outcome 7

The values of the Shire are protected by a preferred pattern of development through identifying GQAL which sustains productive primary industries, particularly the sugar, horticultural and cattle

grazing industries, and consolidates growth and employment opportunities, primarily in the identified locations of Mossman and Port Douglas.

Comment

Whilst the site contains remnant sugar care, it does not contain substantial GQAL to sustain productive primary industries. The site is segregated from GQAL land as it is divided by Parker Creek. In addition, the site is currently zoned 'Commercial and Recreational' under the Planning Scheme and is within the 'Urban Footprint'. The proposed development does not compromise the achievement of the desired environmental outcome.

5.6.1.2.4. Desired Environmental Outcome 8

The economic development of the Shire is facilitated by the provision of infrastructure which complements the conservation economy of the shire with 82% of its lands within the WTWHA in an efficient, equitable and environmentally safe manner, as well as circulation networks which provide for the efficient movement of people and goods, without compromising the Captain Cook Highway as the scenic entry corridor to the Shire.

Comment

The site's location is such that the site would achieve a good urban design outcome and an efficient use of the land, due to its close proximity to the Mossman township, schools, shopping facilities and other community facilities. The site would also allow for the efficient provision of existing and additional infrastructure and transport services due to its location, and would provide opportunities for walking and cycling as an alternative method of travel.

The subject site does not have direct street frontage along Front Street/Captain Cook Highway, as the site is located behind Mossman State High School. The subject site therefore is not considered to compromise the Captain Cook Highway in the movement of people and goods, or compromise the scenic entry corridor to the Shire. The proposed development does not compromise the achievement of the desired environmental outcome.

5.6.1.3. Cultural, Economic, Physical and Social Well-being of the Community.

5.6.1.3.1. Desired Environmental Outcome 9

Places of cultural and heritage significance, both Indigenous and European, are identified, protected and retained for their significance and importance to the history and identity of the Shire.

Comment

Places of cultural and heritage significance, both Indigenous and European will not be affected by the proposed development.

5.6.1.3.2. Desired Environmental Outcome 10

A range of housing options, which provide a high standard of living and a variety of different residential lifestyle opportunities, are available in the Shire and are provided in a sustainable manner with regard to the environment, including its people and communities and the provision of services and facilities.

Comment

The proposed development will provide a high standard of living, encouraging a range of housing options and encourages a variety of different residential lifestyle opportunities within the community. The proposed development has examined the current residential design and demand to propose a design which is unique to the Mossman community. By creating larger lot sizes of between 1,000m^2 and 1,835m^2, the proposed development seeks to attract buyers who are looking to live on larger land parcels and enjoy the aesthetics of the natural environment which borders the site as well as close proximity to the township's services. The proposed development does not compromise the achievement of the desired environmental outcome.

5.6.1.3.3. Desired Environmental Outcome 11

The distinctive character and unique sense of place in the towns, villages and other settlement areas in the Shire including the Daintree Lowlands Community are maintained, promoting community pride and well-being and community safety and prosperity.

Comment

The proposed development reflects a design which encourages the distinctive character and unique sense of place of Mossman by providing a lot design which complements the transition between the high density township and outer rural lands. The lot design ensures housing setbacks are generous, minimising the risk of crime and community safety concerns. Further, the proposed development encourages community pride and well-being by providing open space areas, a walking track and parkland within the development to promote active living, community cohesion and prosperity. The proposed development does not compromise the achievement of the desired environmental outcome.

5.6.1.3.4. Desired Environmental Outcome 12

Residential communities, particularly communities within major tourism areas of Port Douglas, Daintree Village and the Daintree Lowlands maintain a prosperous economy, a sense of community with the natural features, character of those areas and community values and cohesion, promoting harmony between residents and visitors.

Comment

The site is not located within the major tourism areas of Port Douglas, Daintree Village and the Daintree Lowlands. However, the proposed development seeks to maintain a prosperous economy and sense of community by providing development which interconnects with the Mossman township. The location of the subject site ensures that land owners will 'have the best of both worlds' by being surrounded by rural land and natural vegetation, in a secluded position, which is within walking distance to the town centre. The proposed development does not compromise the achievement of the desired environmental outcome.

5.6.2 Code Assessment

The following Codes have been identified as being applicable to this proposal:

- Mossman & Environs Locality Code;
- Residential 1 Planning Area;

- Community and Recreational Facilities Planning Area;
- Acid Sulfate Soils;
- Natural Hazards Code;
- Natural Areas and Scenic Amenity Code;
- Filing and Excavation Code; and
- Reconfiguring a Lot Code.

A detailed assessment of the proposal against the above-mentioned Planning Scheme Codes is included as **Annexure 3** to this report. The proposal is considered compliant with the intent of the Codes, and where a non-compliance with an 'Acceptable Solution' has been identified, comments addressing the corresponding 'Performance Criteria' have been provided within the Code tables, or where further discussion is warranted, below in Sections 5.6.2.1 – 5. The proposed development is not likely to result in any significant detrimental impacts that cannot be managed via the imposition of reasonable and relevant conditions of approval.

5.6.2.1 Need for further Residential Land

As the site is no longer required for Mossman State School, now is the ideal opportunity to integrate a new type of residential development into the Mossman Township.

An Economic Assessment Analysis has been undertaken and prepared by Herron Todd White in association with this application to highlight the current market demand for a development of this type, and the benefits of the development on the immediate Mossman Township. A copy of the report is referenced at **Annexure 4**.

There are currently two (2) existing residential subdivisions within Mossman, being Daintree Horizons and Shepherd Valley, and there is one (1) proposed subdivision located at Junction Road, which is currently the subject of a development application. A map detailing the location of these subdivisions is located on Page 8 of **Annexure 4**.

In summary, the report concludes that:

- There is an average long term demand for residential lots within Mossman, and it is expected that residential land demand in the immediate future is likely to increase;

- Residential lots developed to date within Mossman's two existing land estate are completely 'sold out', resulting in there being no new residential lots currently available for purchase within the Mossman town area;

- There is no lot construction activity currently taking place within Mossman, however there is a significant bank of future developable supply within the two existing estates and Junction Road;

- Both existing estates and Junction Road have primary targets of 800m^2 to 900m^2 size ranges, with limited offerings of lots in excess of 1,000m^2;

- The proposed development will provide lot sizes between 1,000m^2 and 1,835m^2, which will be at level and provide easy building contours;

- An existing estate known as 'Shepherd Valley Estate (Stage 5)' will provide a number of future lots in excess of 1,000 m^2, however most of these lots will be steeply sloping, thus being different in character and likely to appeal to different buyers to the level lots that will be available in the proposed development. Further, it could be some time before Stage 5 of the existing estate becomes developed; and

- The proposed development will assist in providing diversity and choice in the market.

Within the Mossman township, there is an average long term demand for residential lots which is expected in increase in the immediate future. Current available lot sizes are between 800m^2 and 900m^2, with limited offerings of lots in excess of 1,000m^2.

On this basis, the further need for residential land supply of lot sizes between 1,000m^2 and 1,835m^2 is considered to be essential in providing a new form of residential land supply, appealing to a different market to that of the existing and proposed subdivision of Junction Road.

5.6.2.2 Impact on Community and Recreational Facilities Land

The subject site is presently designated as Community and Recreational Facilities, consistent with the prior State ownership attached to the Mossman State High School.

The subject site was recently sold by the Queensland Government (Department of Education) as part of the State Government's 'selling of surplus land' initiative. Based on this approach, it is presumed that the subject site is no longer required for the zoned use of Community and Recreation Facilities.

The Economic Assessment Analysis Report referenced as **Annexure 4** concludes that:

- As the site is currently used for the cultivation of sugar cane, this restricts community and recreational use over most of the site;

- Once developed, the proposed development will retain significant open space along the Parker Creek corridor, and will create public walking/recreational access to this space. In addition, the proposed development will provide a 1,251m^2 internal park area developed with a playground and BBQ facilities; and

- Retention of public access to the Parker Creek corridor, together with the addition of a park, will provide a net increase in community recreational opportunity relative to the site's existing use as cane land.

The Planning Scheme Policy No. 9 – Open Space Contributions requires a contribution of 10% of the land to the reconfigured as an open space contribution, being 3638m^2 of the subject land. The

subject site includes an internal park area with BBQ facilities and a playground, and a walking track along the boundary between Parker Creek which equates to 5,745m^2 of open space contributions.

Based on the above, Community and Recreational uses for the Mossman Township is increased due to the allowance of public facilities such as open parkland, BBQ facilities, a playground and public walking tracks in the proposed development. In addition, the subject site adequately meets the open space contribution requirements, and provides an additional contribution of 2,107m^2.

5.6.2.3 Surrounding Rural Land

The subject site is considered to have a suitable separation buffer from the adjoining rural land. Parker Creek provides a riparian vegetation and watercourse buffer of approximately 35-40 metres in width (Refer to **Figure 1**).

An assessment of the Regional Plan Mapping indicates that the subject site is located on the eastern most boundary of the 'Urban Footprint' for Mossman. **Figure 3** identifies Parker Creek as the buffer between the 'Urban Footprint' and 'Regional Landscape and Rural Production Area' for the Mossman township.

Furthermore, an assessment of the surrounding land uses to the north of the subject site reveal that existing development (adjoining Lot 32 on SP202302, Lot 27 on RP804231 and Lot 1 on RP706243) is within similar proximity to the riparian vegetation and waterway as the proposed development, and appears to use Parker Creek as a buffer between the 'Urban Footprint' and 'Regional Landscape and Rural Production Area' (Refer to **Figure 3** and **Figure 4**).

Therefore, based on the locality of the subject site and surrounding existing development, the proposed development is considered to be of a suitable separation distance from surrounding rural land, ensuring minimal impact on both residential and rural land uses.

5.6.2.4 Setbacks

The subject site adjoins remnant vegetation in the form of a riparian corridor and associated watercourse known as Parker Creek. **Table 2** below identifies the vegetation and watercourse mapping categories which are included in **Annexure 5** and **Annexure 6**, respectively.

Table 2 Vegetation/Watercourse Mapping

Department	Map	Category
Department of Natural Resources and Mines	Regulated Vegetation Management Map	Category B area (Remnant Vegetation) and Category R area (Reef regrowth watercourse vegetation)
Department of Natural Resources and Mines	Vegetation Management Supporting Map	Category A or B area containing endangered regional ecosystems
Douglas Shire Council	Perennial Watercourse Mapping	Category 3 – Minor Perennial

In accordance with the Natural Areas and Scenic Amenity Code, the lot layout complies with the required width of the setback area, measured out from the shoulder of each high bank for the Category 3 – Minor Perennial Watercourse, where a riparian corridor of vegetation already exists. The setback is 10 metres from the shoulder of the high bank, which is illustrated in the lot layout in **Figure 2**.

In addition to meeting the requirement of the code, the large lot designs, encourage an additional setback between riparian vegetation and dwellings, as houses are more likely to be located closer to road frontage to gain access to services including electricity, telecommunications, sewer and water.

5.6.2.5 Drainage and Flooding Impacts and Mitigation Measures

An Engineering Report has been prepared by Genesis Engineering outlining water supply infrastructure, sewerage infrastructure, stormwater drainage infrastructure and flood inundation, and associated mitigation measures for the site, see **Annexure 7**. In addition, a report was undertaken by AECOM in April 2013 detailing flooding impacts to Mossman and is included in the Engineering Report as Appendix C. Refer to **Annexure 7**. The details provided below, including specifics and assumptions are directly referenced from **Annexure 7.**

In summary, the Engineering Report concludes:

1. **Initial Engineering Comments**

- The site has a ridge of approximately 8m to 9m AHD on the proposed road alignment. This seems a practical place to locate the road;
- Existing Crawford Street is around RL 8.5m. The proposed road should join well with the existing Crawford Street Infrastructure;
- The site has a natural central high point which falls to the north, west and south. This appears good for stormwater drainage;

- The eastern creek may impact on the site during flood events; and
- The drainage easements seem to be well placed to drain the site and to convey storm water.

2. Water Supply Infrastructure

A Preliminary Water Reticulation Layout is shown as Sketch 01 and is referenced as Appendix B in **Annexure 7**. The proposed development layout has a supply from existing Council water supply infrastructure in Crawford Street.

The Preliminary Water Reticulation Layout shows a 100mm diameter water supply ring main in the road reserves, with 50mm diameter loop line in the main road to provide reticulation as required in the FNQROC Development Manual.

The Open Space areas of the subject site will also be connected to water supply infrastructure.

On the 31st October 2014, discussions occurred between Genesis Engineering and Douglas Shire Council regarding the ability of Council's existing water supply infrastructure to provide adequate water Pressure Flow to the subject site. Council were unable to provide current water supply Pressure and Flow information, and could not confirm whether Council's existing water supply infrastructure was sufficient to supply the subject site.

Council advised that the Development will need to arrange for Pressure and Flow testing to verify whether or not Council's existing water supply infrastructure is sufficient to supply the subject site.

This will be verified in the design phase of the development. The proposed development is not likely to result in any significant detrimental impacts that cannot be managed via the imposition of reasonable and relevant conditions of approval.

3. Sewerage Infrastructure

A Preliminary Sewerage Reticulation Layout is shown as Sketch 01 and is referenced as Appendix B in **Annexure 7**. The proposed development layout discharges to an existing sewage manhole at the end of Crawford Street.

The Preliminary Sewerage Reticulation Layout is based on providing a 150mm diameter gravity sewerage system to as much of the site as possible.

The Engineering Report details that some of the Lots are lower than the sewerage manhole. A Sewerage Pump Station (SPS) has been shown on Lot 5 (Appendix B, **Annexure 7**). This SPS receives gravity sewerage from Lot 4 to Lot 15. The SPS has a Sewerage Rising Main (SRM) which conveys sewerage pumped from the SPS to the exiting sewerage manhole at the end of Crawford Street.

Lots 1-3, and 16-19 have separate 150mm diameter gravity sewerage mains discharging into the existing manhole at the end of Crawford Street.

Lots 1-6 and Lot 9 are shown with design fill levels, shown as numbers in rectangles at Appendix B, **Annexure 7**. These lots require fill to obtain a more efficient gravity sewerage system. These fill levels are preliminary only and will be refined in the design phase.

The ability of Council's existing sewerage infrastructure to receive sewerage generated by the proposed development was discussed between Genesis Engineering and Douglas Shire Council on the 31st October 2014. Council were unable to confirm if the existing sewerage infrastructure would be sufficient to receive the sewage generated by the proposed development. Council advised that the Developer will need to provide Council with the various design sewerage flow rates to enable Council to comment on the adequacy of the existing sewerage infrastructure.

This will be verified in the initial design phase of the development. The proposed development is not likely to result in any significant detrimental impacts that cannot be managed via the imposition of reasonable and relevant conditions of approval.

4. Stormwater Drainage Infrastructure

A Preliminary Stormwater Drainage Reticulation Layout is shown as Sketch 01 and is referenced as Appendix B in **Annexure 7**. This layout discharges in several locations to the adjoining Parker Creek which is east of the development.

The Preliminary Stormwater Drainage Reticulation Layout is based on capturing flows generated by minor storm events in stormwater pits; and conveying these minor flows underground in Reinforced Concrete Pipes (RCP's) to discharge points.

Stormwater generated by major storm events will be conveyed above ground via roads, road reserves, and dedicated open drains in the drainage reserves.

Some Lot filling has been shown to ensure the integrity of the overland stormwater drainage paths. The fill levels and stormwater regime will need to be verified during the initial part of the design phase.

5. Flood Inundation

Discussions between Genesis Engineering and Douglas Shire Council occurred on the 31st October 2014, and Council were not able to provide details regarding the external stormwater catchments, or the potential flooding or inundation from the adjoining Parker Creek to the east of the subject site.

The likely impact of flooding from Parker Creek was obtained from a document titled '*QRA Flood Hazard Mapping – Mossman*', which was prepared by AECOM in April 2013. This document is referenced as Appendix C in **Annexure 7**. The document concludes that:

- The Q100 (AEP 1%) flood level is RL 7.3m AHD at the subject site;
- The Q500 (AEP 0.2%) flood level is RL 7.9m AHD at the site; and

- The required flood immunity for the proposed development is Q100.

In addition, the Engineering Report (**Annexure 7**) details:

- Some parts of Lot 1, 6 and 9 are below the 7.3m AHD Q100 flood level; and
- This means that these Lots will need to be filled to above RL 7.3m AHD.

The design fill levels shown on Sketch 01, **Annexure 7** are all above the 0.1% AEP flood level of RL 7.3m AHD. They are also above the 0.2% AEP flood level of RL 7.9m AHD. The amount of fill required on these lots is minimal. It will have negligible or/indeterminate impact on flooding in Parker Creek and / or Mossman or South Mossman Rivers.

Summary

An Engineering Report was completed by Genesis Engineering to provide initial advice regarding, water supply infrastructure, sewerage infrastructure, stormwater drainage infrastructure and flood inundation, and associated mitigation measures for the site. Based on the preliminary investigation there is no reason form an engineering perspective why the proposed development could not proceed. A summary of the initial Engineering advice is provided below:

- The proposed development has a water supply connection to Council's existing water supply infrastructure.
- Sewerage for the proposed development discharges to an existing sewerage manhole at the end of Crawford Street. Some Lots are lower than the sewerage manhole and a Sewerage Pump Station has been shown on Lot 5. Lots 1-6 and Lot 9 are shown with design fill levels to obtain a more efficient gravity sewerage system.
- The proposed development discharges stormwater in several locations to the adjoining Parker Creek. Minor storm evens in stormwater pits are conveyed underground in RCP's to discharge points, while Major storm events will be conveyed above ground via roads, road reserves, and dedicated open drains in the drainage reserves. Fill of some Lots will be required, and this will be detailed at the Design Phase.
- Q100 (AEP 1%) flood level is RL 7.3m AHD, and Q500 (AEP 0.2%) flood level is RL 7.9m AHD are detailed on the subject site. The required flood immunity for the proposed development is Q100. Fill of some Lots is required.
- Filling of the Lots addressed above is considered the primary mitigation measure. The amount of fill required on these Lots to address Sewerage, Stormwater and Flood Inundation is minimal and will have a negligible impact on flooding in Parker Creek and / or Mossman or South Mossman Rivers. This mitigation measure will avoid detrimental or unnecessary impacts on the proposed development, Council's existing infrastructure, and flood inundation.

6.0 Conclusion

This Planning Report has been prepared by Planning Plus Pty Ltd on behalf of NV & JS Pty Ltd ("The Applicant") in support of an application to Douglas Shire Council seeking a Development Permit for Preliminary Approval to Override the Planning Scheme for use rights associated with the Residential 1 Planning Area and a Reconfiguration of a Lot (1 into 19), over land at 46-62 Front Street, Mossman, described as Lot 12 on SP252360.

The development proposed is 'assessable development' as defined in Schedule 3 of the *Sustainable Planning Regulations 2009* and thus requires assessment against local Planning Scheme provisions and relevant State legislation.

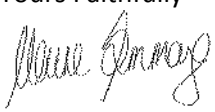
In summary, the report concludes that:

- The submitted information conforms to the requirements for making a 'impact-assessable' development application under the *Sustainable Planning Act 2009*;
- The proposed development does achieve the intent of the Douglas Shire Planning Scheme and relevant State legislation, and where relaxations against relevant technical planning provisions are sought, adequate justification is provided; and
- The proposed development is not likely to result in any significant detrimental impacts that cannot be managed via the imposition of reasonable and relevant conditions of approval.

In light of the above, we present the application for Council's favourable consideration.

We trust this information is sufficient for your purposes; however should you require any further details or clarification, please do not hesitate to contact the undersigned.

Yours Faithfully



Claire Simmons
Planner
Planning Plus Pty Ltd

enc: **Figure 1**: Google Globe Aerial Overlay
Figure 2: Lot Layout and Contour
Figure 3: Regional Plan Mapping
Figure 4: Surrounding Development
Annexure 1: IDAS Forms
Annexure 2: Title Search
Annexure 3: Code Assessment – Douglas Shire Council Planning Scheme
Annexure 4: Mossman Needs Analysis
Annexure 5: Regulated Vegetation and Vegetation Management Map
Annexure 6: Perennial Watercourse Mapping
Annexure 7: Preliminary Engineering Report

Figure 1

Google Globe Aerial Overlay

Grogan St
Crawford St
Front St
14
Captain Cook Hwy
Harper St
2011
Lot 12 on SP252360
© State of Queensland 2014, © CNES 2012, Distribution Astrium Services / Spot Image S.A France.
Google earth
Imagery Date: 9/28/2013 16°27'50.21" S 145°22'37.00" E elev 11 m eye alt 789 m

Figure 2

Lot Layout and Contour

IMPORTANT NOTE

1. This plan was prepared for the sole purposes of the client for the specific purpose of accompanying an application to the Douglas Shire Council for a reconfiguration of a lot described on this plan. This plan is strictly limited to the Purpose and does not apply directly or indirectly and will not be used for any other application, purpose, use or matter. The plan is presented without the assumption of a duty of care to any other person (other than the Client) ("Third Party") and may not be relied on by Third Party.

2. RPS Australia East Pty Ltd will not be liable (in negligence or otherwise) for any direct or indirect loss, damage, liability or claim arising out of or incidental to:
   A. Third Party publishing, using or relying on the plan;
   B. RPS Australia East Pty Ltd relying on information provided to it by the Client or a Third Party where the information is incorrect, incomplete, inaccurate, out-of-date or unreasonable;
   C. any inaccuracies or other faults with information or data sourced from a Third Party;
   D. RPS Australia East Pty Ltd relying on surface indicators that are incorrect or inaccurate;
   E. the Client or any Third Party not verifying information in this plan where recommended by RPS Australia East Pty Ltd;
   F. lodgement of this plan with any local authority against the recommendation of RPS Australia East Pty Ltd;
   G. the accuracy, reliability, suitability or completeness of any approximations or estimates made or referred to by RPS Australia East Pty Ltd in this plan.

3. Without limiting paragraph 1 or 2 above, this plan may not be copied, distributed, or reproduced by any process unless this note is clearly displayed on the plan.

4. Scale shown is correct for the original plan and any copies of this plan should be verified by checking against the bar scale.

5. The dimensions, area, size and location of improvements, flood information (if shown) and number of lots shown on this plan are approximate only and may vary.

6. Cadastral boundaries are obtained by title dimensions and/or DCDB. These boundaries have not been verified and are approximate only.

7. The contours shown on this plan are by field survey and are suitable only for the purposes of this application. The accuracy of the contours has not been verified and no reliance should be placed upon such contours for any purpose other than for the purpose of this application for a reconfiguration of a lot.

DNRM AERIAL PHOTOGRAPHY.

Based on or contains data provided by the State of Queensland (Department of Natural Resource & Mines) [2014]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws.

The aerial photography used in this plan has not been rectified. The image has been overlaid as a best fit on the boundaries shown and position is approximate only.

Date of Capture: 28 / 9 / 2013.

Number of Lots:	19
Minimum Area:	1000m²
Average Area:	1232m²
Length New Road:	447m
Subject Lot 12 Area	3.638 ha
Less Passive Open Space / Creek setback:	4495m²
Developable Area	3.1885 ha

LEGEND

- Road Crown
- Edge of Bitumen
- Invert of Open Drain
- Drainage Pipe U/G
- Sewer Manhole
- Fire Hydrant
- Water Meter
- Electricity Cable A/G
- Elec Pole
- Telstra Pit
- Top of Bank
- Toe of Bank
- Fence
- Drainage Path

NOTES

Level Datum: AHD

Origin of Levels: PSM 52406
RL 9.293

Meridian: SP252360

Origin of Coordinates: PSM 96085
E: 5002.531
N: 10000.315

Contour Interval: 0.2m
Index: 1.0m

0 5 10 15 20 25 metres

SCALE 1:500 IS APPLICABLE ONLY TO THE ORIGINAL SHEET SIZE. (A1)
(1:1000 @ A3)

AMENDMENTS	
PROJECT MANAGER	A. Kerlin
SURVEYED	MW 15/9/2014
COMPILED	AMK
CAD REF	PR124232-4.DWG
	124232-201.ccx
SHEET	1
OF SHEETS	1
SHEET SIZE	A1

NV & JS PTY LTD

RECONFIGURATION OF A LOT
PROPOSED RESIDENTIAL DEVELOPMENT
CANCELLING LOT 12 ON SP252360
CRAWFORD ST MOSSMAN

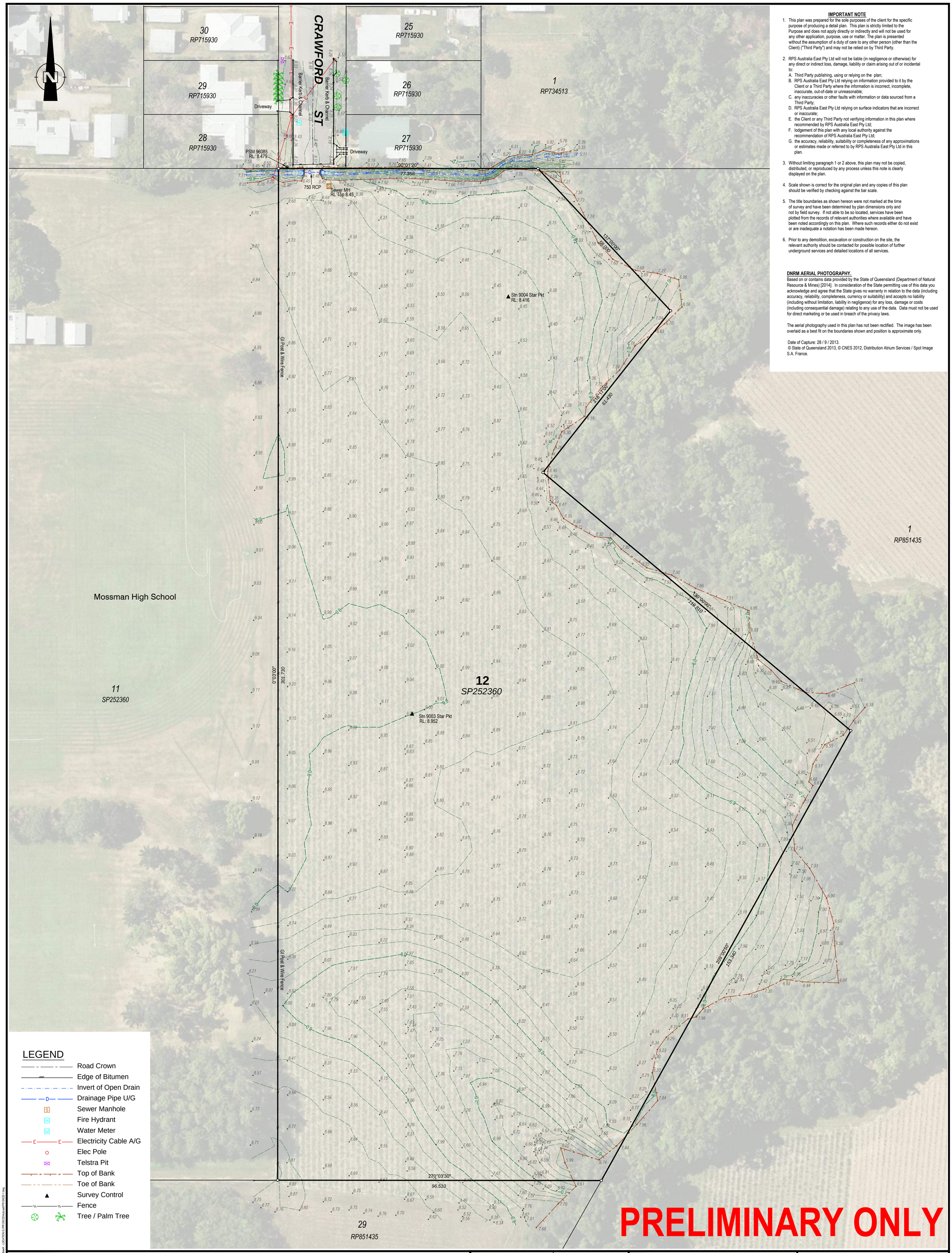
RPS Australia East Pty Ltd
ACN 140 292 762

135 Abbott St
PO Box 1949
CAIRNS QLD 4870

T +61 7 4031 1336
F +61 7 4031 2942
W rpsgroup.com.au

SCALE	DATE	DRAWING NO.	ISSUE
1:500	24/11/2014	PR124232-4	

PLOTTED:24.11.2014@13:01:23 - BY:KERLIN A. XrefsAttached: LOCATION:G:\PR\124232\Drawings\PR124232-4.dwg



IMPORTANT NOTE

1. This plan was prepared for the sole purposes of the client for the specific purpose of producing a detail plan. This plan is strictly limited to the Purpose and does not apply directly or indirectly and will not be used for any other application, purpose, use or matter. The plan is presented without the assumption of a duty of care to any other person (other than the Client) ("Third Party") and may not be relied on by Third Party.

2. RPS Australia East Pty Ltd will not be liable (in negligence or otherwise) for any direct or indirect loss, damage, liability or claim arising out of or incidental to:
   A. Third Party publishing, using or relying on the plan;
   B. RPS Australia East Pty Ltd relying on information provided to it by the Client or a Third Party where the information is incorrect, incomplete, inaccurate, out-of-date or unreasonable;
   C. any inaccuracies or other faults with information or data sourced from a Third Party;
   D. RPS Australia East Pty Ltd relying on surface indicators that are incorrect or inaccurate;
   E. the Client or any Third Party not verifying information in this plan where recommended by RPS Australia East Pty Ltd;
   F. lodgement of this plan with any local authority against the recommendation of RPS Australia East Pty Ltd;
   G. the accuracy, reliability, suitability or completeness of any approximations or estimates made or referred to by RPS Australia East Pty Ltd in this plan.

3. Without limiting paragraph 1 or 2 above, this plan may not be copied, distributed, or reproduced by any process unless this note is clearly displayed on the plan.

4. Scale shown is correct for the original plan and any copies of this plan should be verified by checking against the bar scale.

5. The title boundaries as shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey. If not able to be so located, services have been plotted from the records of relevant authorities where available and have been noted accordingly on this plan. Where such records either do not exist or are inadequate a notation has been made hereon.

6. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

DNRM AERIAL PHOTOGRAPHY.

Based on or contains data provided by the State of Queensland (Department of Natural Resource & Mines) [2014]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws.

The aerial photography used in this plan has not been rectified. The image has been overlaid as a best fit on the boundaries shown and position is approximate only.

Date of Capture: 28 / 9 / 2013.

LEGEND

- Road Crown
- Edge of Bitumen
- Invert of Open Drain
- Drainage Pipe U/G
- Sewer Manhole
- Fire Hydrant
- Water Meter
- Electricity Cable A/G
- Elec Pole
- Telstra Pit
- Top of Bank
- Toe of Bank
- Survey Control
- Fence
- Tree / Palm Tree

NOTES

Level Datum: AHD

Origin of Levels: PSM 52406
RL 9.293

Meridian: SP252360

Origin of Coordinates: PSM 96085
E: 5002.531
N: 10000.315

Contour Interval: 0.2m
Index: 1.0m

0 5 10 15 20 25
metres

SCALE 1:500 IS APPLICABLE ONLY TO THE ORIGINAL SHEET SIZE. (A1)
(1:1000 @ A3)

PRELIMINARY ONLY

AMENDMENTS	PROJECT MANAGER	
	A. Kerlin	
	SURVEYED	
	MW	15/9/2014
	COMPILED	
	AMK	
CAD REF	SHEET 1 OF SHEETS 1	SHEET SIZE
PR124232-1.DWG 124232-201.ccx		A1

NV & JS PTY LTD

DETAIL & CONTOUR SURVEY

LOT 12 SP252360
CRAWFORD ST MOSSMAN

RPS
RPS Australia East Pty Ltd
ACN 140 292 762
135 Abbott St
PO Box 1949
CAIRNS QLD 4870
T +61 7 4031 1336
F +61 7 4031 2942
W rpsgroup.com.au

SCALE	DATE	DRAWING NO.	ISSUE
1:500	16/9/2014	PR124232-1	

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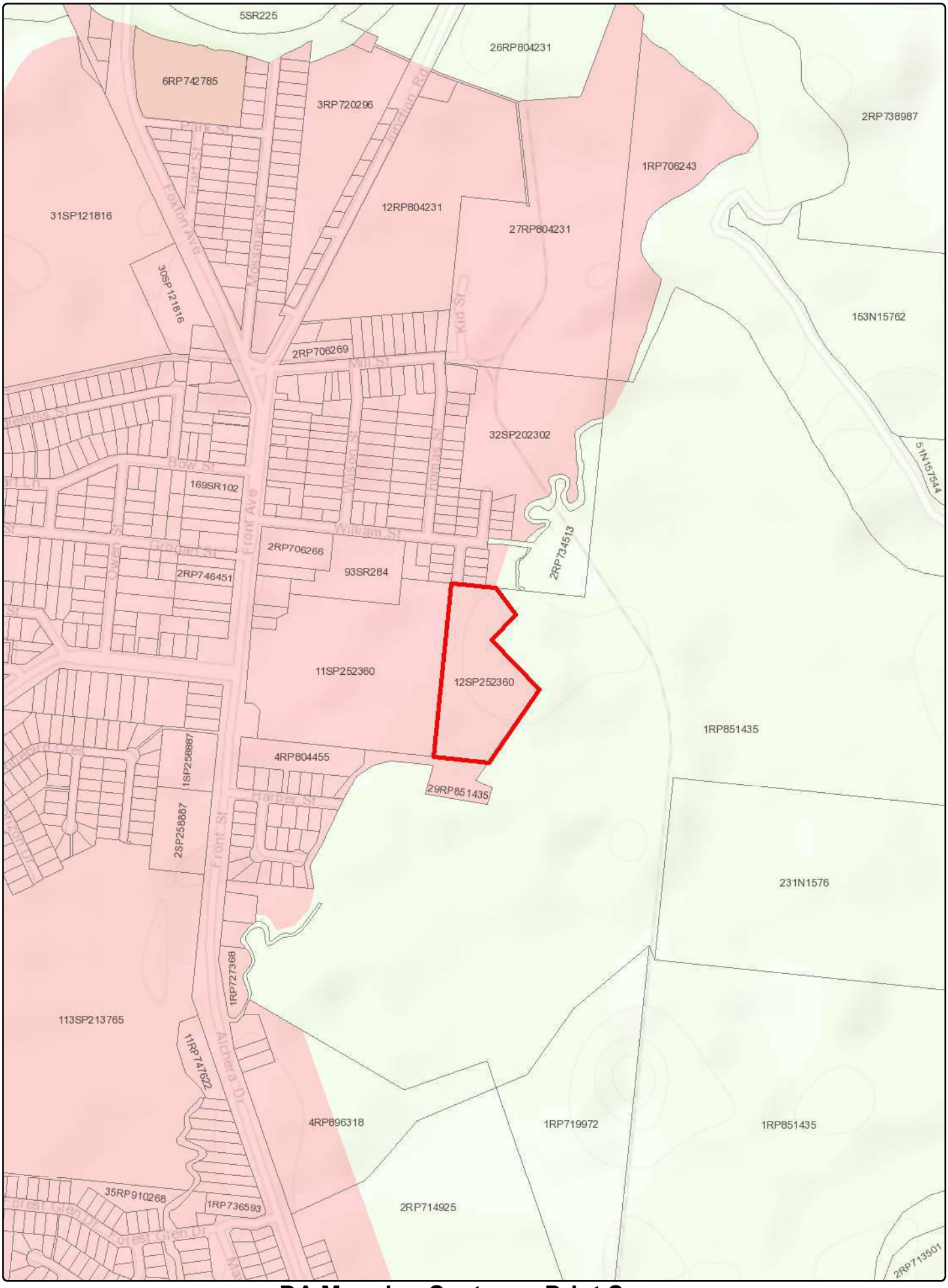
Figure 3

Regional Plan Mapping



DA Mapping System – Print Screen

Date: 15/12/2014

0 45 90 180 270 360

Metres

Department of
State Development
Infrastructure and Planning

Queensland Government

Disclaimer:
This map has been generated from the information supplied to the Department of State Development, Infrastructure and Planning for the purposes of Development Assessment Mapping Online but is a print screen only and should not be used for development application (DA) purposes. For DA purposes the user should use the Print Report function to obtain a list of DA triggers. The map generated has been prepared with due care based on the best available information at the time of publication. The State of Queensland holds no responsibility for any errors, inconsistencies or omissions within this document. Any decisions made by other parties based on this document are solely the responsibility of those parties.

Legend

Drawn Polygon Layer

Override 1

Cadastre (10k)

Cadastre (10k)

Regional Land Use Categories (SEQ, WBB, MIW, FNQ)

Urban Footprint

Rural Living Area

Regional Landscape and Rural Production Area

DA Mapping System – Print Screen

Date: 15/12/2014

Department of
State Development
Infrastructure and Planning

Figure 4

Surrounding Development


Lot 1 on RP706243
Lot 27 on RP804231
Lot 32 on SP202302
Subject Site
Mossman QLD 4873
Mossman
Junction Rd
Hart St
Middlemiss St
Enid Mayl Ln
Thomas St
Mullaveys St
Grogan St
Crawford St
Ingles St
Owen St
Johnston Rd
Esplanade
14
2011
© State of Queensland 2014, © CNES 2012, Distribution Astrium Services / Spot Image S.A France.
Google earth
Imagery Date: 9/28/2013 16°27'39.48" S 145°22'42.56" E elev 8 m eye alt 1.54 km

Annexure 1

IDAS Forms

IDAS form 1—Application details

(*Sustainable Planning Act 2009* version 4.1 effective 4 July 2014)

This form must be used for **ALL** development applications.

You **MUST** complete **ALL** questions that are stated to be a mandatory requirement unless otherwise identified on this form.

For all development applications, you must:

- complete this form (*IDAS form 1—Application details)*
- complete any other forms relevant to your application
- provide any mandatory supporting information identified on the forms as being required to accompany your application.

Attach extra pages if there is insufficient space on this form.

All terms used on this form have the meaning given in the *Sustainable Planning Act 2009* (SPA) or the Sustainable Planning Regulation 2009.

This form and any other IDAS form relevant to your application must be used for development applications relating to strategic port land and Brisbane core port land under the *Transport Infrastructure Act 1994* and airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*. Whenever a planning scheme is mentioned, take it to mean land use plan for the strategic port land, Brisbane core port land or airport land.

PLEASE NOTE: This form is not required to accompany requests for compliance assessment.

This form can also be completed online using MyDAS at www.dsdip.qld.gov.au/MyDAS

Mandatory requirements

Applicant details (Note: the applicant is the person responsible for making the application and need not be the owner of the land. The applicant is responsible for ensuring the information provided on all IDAS application forms is correct. Any development permit or preliminary approval that may be issued as a consequence of this application will be issued to the applicant.)

Name/s (individual or company name in full)	**NV & JS Pty Ltd**			
For companies, contact name	**Claire Simmons**			
Postal address	C/- Planning Plus Pty Ltd			
	PO Box 8046			
	Suburb	Cairns		
	State	QLD	Postcode	4870
	Country	Australia		
Contact phone number	0401085438			
Mobile number (non-mandatory requirement)				
Fax number (non-mandatory requirement)				

Email address (non-mandatory requirement)	Claire @ planningplusqld.com.au
Applicant's reference number (non-mandatory requirement)	14-20/R000112

1. What is the nature of the development proposed and what type of approval is being sought?

Table A—Aspect 1 of the application (If there are additional aspects to the application please list in Table B—Aspect 2.)

a) What is the nature of the development? (Please only tick one box.)

☐ Material change of use ☒ Reconfiguring a lot ☐ Building work ☐ Operational work

b) What is the approval type? (Please only tick one box.)

☐ Preliminary approval under s241 of SPA ☐ Preliminary approval under s241 and s242 of SPA ☒ Development permit

c) Provide a brief description of the proposal, including use definition and number of buildings or structures where applicable (e.g. six unit apartment building defined as a *multi-unit dwelling*, 30 lot residential subdivision etc.)

Reconfiguration of a Lot (1 into 19)

d) What is the level of assessment? (Please only tick one box.)

☐ Impact assessment ☒ Code assessment

Table B—Aspect 2 of the application (If there are additional aspects to the application please list in Table C—Additional aspects of the application.)

a) What is the nature of development? (Please only tick one box.)

☐ Material change of use ☐ Reconfiguring a lot ☐ Building work ☐ Operational work

b) What is the approval type? (Please only tick one box.)

☐ Preliminary approval under s241 of SPA ☒ Preliminary approval under s241 and s242 of SPA ☐ Development permit

c) Provide a brief description of the proposal, including use definition and number of buildings or structures where applicable (e.g. six unit apartment building defined as a *multi-unit dwelling*, 30 lot residential subdivision etc.)

Preliminary Approval to Override the Planning Scheme for use rights associated with the Residential 1 Planning Area

d) What is the level of assessment?

☒ Impact assessment ☐ Code assessment

Table C—Additional aspects of the application (If there are additional aspects to the application please list in a separate table on an extra page and attach to this form.)

☐ Refer attached schedule ☐ Not required

2. Location of the premises (Complete Table D and/or Table E as applicable. Identify each lot in a separate row.)

Table D—Street address and lot on plan for the premises or street address and lot on plan for the land adjoining or adjacent to the premises (Note: this table is to be used for applications involving taking or interfering with water). (Attach a separate schedule if there is insufficient space in this table.)

☒ Street address **and** lot on plan (All lots must be listed.)

☐ Street address **and** lot on plan for the land adjoining or adjacent to the premises (Appropriate for development in water but adjoining or adjacent to land, e.g. jetty, pontoon. All lots must be listed.)

Street address					**Lot on plan description**		**Local government area** (e.g. Logan, Cairns)
Lot	Unit no.	Street no.	Street name and official suburb/ locality name	Post-code	Lot no.	Plan type and plan no.	
i)		46-62	Front Street, Mossman	4873	12	SP252360	Douglas Shire Council
ii)							
iii)							

Planning scheme details (If the premises involves multiple zones, clearly identify the relevant zone/s for each lot in a separate row in the below table. Non-mandatory)

Lot	Applicable zone / precinct	Applicable local plan / precinct	Applicable overlay/s
i)	Community and Recreational Facilities Planning Area	Mossman and Environs Locality	High scale plot ratio Acid Sulfate Soils Low-Medium Risk Bushfire
ii)			
iii)			

Table E—Premises coordinates (Appropriate for development in remote areas, over part of a lot or in water not adjoining or adjacent to land e.g. channel dredging in Moreton Bay.) (Attach a separate schedule if there is insufficient space in this table.)

Coordinates (Note: place each set of coordinates in a separate row)				**Zone reference**	**Datum**	**Local government area (if applicable)**
Easting	Northing	Latitude	Longitude			
					☐ GDA94 ☐ WGS84 ☐ other	

3. Total area of the premises on which the development is proposed (indicate square metres)

3.638ha

4. Current use/s of the premises (e.g. vacant land, house, apartment building, cane farm etc.)

Vacant

5. Are there any current approvals (e.g. a preliminary approval) associated with this application? (Non-mandatory requirement)

☒ No ☐ Yes—provide details below

List of approval reference/s	Date approved (dd/mm/yy)	Date approval lapses (dd/mm/yy)

6. Is owner's consent required for this application? (Refer to notes at the end of this form for more information.)

☐ No

☒ Yes—complete either Table F, Table G or Table H as applicable

Table F	
Name of owner/s of the land	
I/We, the above-mentioned owner/s of the land, consent to the making of this application.	
Signature of owner/s of the land	
Date	

Table G	
Name of owner/s of the land	
☐ The owner's written consent is attached or will be provided separately to the assessment manager.	

Table H	
Name of owner/s of the land	**NV & JS Pty Ltd**
☒ By making this application, I, the applicant, declare that the owner has given written consent to the making of the application.	

7. Identify if any of the following apply to the premises (Tick applicable box/es.)

☒ Adjacent to a water body, watercourse or aquifer (e.g. creek, river, lake, canal)—complete Table I

☐ On strategic port land under the *Transport Infrastructure Act 1994*—complete Table J

☐ In a tidal water area—complete Table K

☐ On Brisbane core port land under the *Transport Infrastructure Act 1994* (No table requires completion.)

☐ On airport land under the *Airport Assets (Restructuring and Disposal) Act 2008* (no table requires completion)

☐ Listed on either the Contaminated Land Register (CLR) or the Environmental Management Register (EMR) under the *Environmental Protection Act 1994* (no table requires completion)

Table I
Name of water body, watercourse or aquifer
Parker Creek

Table J	
Lot on plan description for strategic port land	Port authority for the lot

Table K	
Name of local government for the tidal area (if applicable)	Port authority for the tidal area (if applicable)

8. Are there any existing easements on the premises? (e.g. for vehicular access, electricity, overland flow, water etc)

☐ No ☒ Yes—ensure the type, location and dimension of each easement is included in the plans submitted

9. Does the proposal include new building work or operational work on the premises? (Including any services)

☒ No ☐ Yes—ensure the nature, location and dimension of proposed works are included in plans submitted

10. Is the payment of a portable long service leave levy applicable to this application? (Refer to notes at the end of this form for more information.)

☒ No—go to question 12 ☐ Yes

11. Has the portable long service leave levy been paid? (Refer to notes at the end of this form for more information.)

☐ No

☐ Yes—complete Table L and submit with this application the yellow local government/private certifier's copy of the receipted QLeave form

Table L		
Amount paid	Date paid (dd/mm/yy)	QLeave project number (6 digit number starting with A, B, E, L or P)

12. Has the local government agreed to apply a superseded planning scheme to this application under section 96 of the *Sustainable Planning Act 2009*?

☒ No

☐ Yes—please provide details below

Name of local government	Date of written notice given by local government (dd/mm/yy)	Reference number of written notice given by local government (if applicable)

13.	**List below all of the forms and supporting information that accompany this application** (Include all IDAS forms, checklists, mandatory supporting information etc. that will be submitted as part of this application. Note: this question does not apply for applications made online using MyDAS)

Description of attachment or title of attachment	**Method of lodgement to assessment manager**
Planning Report	SmartEDA

14.	**Applicant's declaration**

☒ By making this application, I declare that all information in this application is true and correct (Note: it is unlawful to provide false or misleading information)

Notes for completing this form

- Section 261 of the *Sustainable Planning Act 2009* prescribes when an application is a properly-made application. Note, the assessment manager has discretion to accept an application as properly made despite any non-compliance with the requirement to provide mandatory supporting information under section 260(1)(c) of the *Sustainable Planning Act 2009*

Applicant details

- Where the applicant is not a natural person, ensure the applicant entity is a real legal entity.

Question 1

- Schedule 3 of the Sustainable Planning Regulation 2009 identifies assessable development and the type of assessment. Where schedule 3 identifies assessable development as "various aspects of development" the applicant must identify each aspect of the development on Tables A, B and C respectively and as required.

Question 6

- Section 263 of the *Sustainable Planning Act 2009* sets out when the consent of the owner of the land is required for an application. Section 260(1)(e) of the *Sustainable Planning Act 2009* provides that if the owner's consent is required under section 263, then an application must contain, or be accompanied by, the written consent of the owner, or include a declaration by the applicant that the owner has given written consent to the making of the application. If a development application relates to a state resource, the application is not required to be supported by evidence of an allocation or entitlement to a state resource. However, where the state is the owner of the subject land, the written consent of the state, as landowner, may be required. Allocation or entitlement to the state resource is a separate process and will need to be obtained before development commences.

Question 7

- If the premises is listed on either the Contaminated Land Register (CLR) or the Environmental Management Register (EMR) under the *Environmental Protection Act 1994* it may be necessary to seek compliance assessment. Schedule 18 of the Sustainable Planning Regulation 2009 identifies where compliance assessment is required.

Question 11

- The *Building and Construction Industry (Portable Long Service Leave) Act 1991* prescribes when the portable long service leave levy is payable.
- The portable long service leave levy amount and other prescribed percentages and rates for calculating the levy are prescribed in the Building and Construction Industry (Portable Long Service Leave) Regulation 2002.

Question 12

- The portable long service leave levy need not be paid when the application is made, but the *Building and Construction Industry (Portable Long Service Leave) Act 1991* requires the levy to be paid before a development permit is issued.
- Building and construction industry notification and payment forms are available from any Queensland post office or agency, on request from QLeave, or can be completed on the QLeave website at www.qleave.qld.gov.au. For further information contact QLeave on 1800 803 481 or visit www.qleave.qld.gov.au.

Privacy—The information collected in this form will be used by the Department of State Development, Infrastructure and Planning (DSDIP), assessment manager, referral agency and/or building certifier in accordance with the processing and assessment of your application. Your personal details should not be disclosed for a purpose outside of the IDAS process or the provisions about public access to planning and development information in the *Sustainable Planning Act 2009*, except where required by legislation (including the *Right to Information Act 2009*) or as required by Parliament. This information may be stored in relevant databases. The information collected will be retained as required by the *Public Records Act 2002*.

OFFICE USE ONLY

Date received		Reference numbers	

NOTIFICATION OF ENGAGEMENT OF A PRIVATE CERTIFIER

To [ ] Council. I have been engaged as the private certifier for the building work referred to in this application

Date of engagement	Name	BSA Certification license number	Building classification/s

QLEAVE NOTIFICATION AND PAYMENT (For completion by assessment manager or private certifier if applicable.)

Description of the work	QLeave project number	Amount paid ($)	Date paid	Date receipted form sighted by assessment manager	Name of officer who sighted the form

The *Sustainable Planning Act 2009* is administered by the Department of State Development, Infrastructure and Planning. This form and all other required application materials should be sent to your assessment manager and any referral agency.

IDAS form 7—Reconfiguring a lot

(*Sustainable Planning Act 2009* version 3.1 effective 1 October 2014)

This form must be used for development applications or requests for compliance assessment for reconfiguring a lot.

You **MUST** complete **ALL** questions that are stated to be a mandatory requirement unless otherwise identified on this form.

For all development applications, you must:

- complete *IDAS form 1—Application details*
- complete any other forms relevant to your application
- provide any mandatory supporting information identified on the forms as being required to accompany your application.

For requests for compliance assessment, you must:

- complete IDAS form 32—Compliance assessment
- Provide any mandatory supporting information identified on the forms as being required to accompany your request

Attach extra pages if there is insufficient space on this form.

All terms used on this form have the meaning given in the *Sustainable Planning Act 2009* (SPA) or the Sustainable Planning Regulation 2009.

This form can also be completed online using MyDAS at www.dsdip.qld.gov.au/MyDAS

Mandatory requirements

1. What is the total number of existing lots making up the premises?	**1**

2. What is the nature of the lot reconfiguration? (Tick all applicable boxes.)

- ☒ subdivision—complete questions 3–6 and 11
- ☐ boundary realignment—complete questions 8, 9 and 11
- ☐ creating an easement giving access to a lot from a constructed road—complete questions 10 and 11
- ☐ dividing land into parts by agreement—please provide details below and complete questions 7 and 11

3. Within the subdivision, what is the number of additional lots being created and their intended final use?

Intended final use of new lots	Residential	Commercial	Industrial	Other—specify
Number of additional lots created	18			

4. What type of approval is being sought for the subdivision?

- ☒ Development permit
- ☐ Preliminary approval
- ☐ Compliance permit

5. Are there any current approvals associated with this subdivision application or request?
(E.g. material change of use.)

☒ No ☐ Yes—provide details below

List of approval reference/s	Date approved (dd/mm/yy)	Date approval lapses (dd/mm/yy)

6. Does the proposal involve multiple stages?

☒ No—complete Table A ☐ Yes—complete Table B

Table A

a) What is the total length of any new road to be constructed? (metres) — 447m

b) What is the total area of land to be contributed for community purposes? (square metres) — 5,745m2

c) Does the proposal involve the construction of a canal or artificial waterway?

☒ No ☐ Yes

d) Does the proposal involve operational work for the building of a retaining wall?

☒ No ☐ Yes

Table B—complete a new Table B for every stage if the application involves more than one stage

a) What is the proposed estate name? (if known and if applicable)

b) What stage in the development does this table refer to?

c) If a development permit is being sought for this stage, will the development permit result in additional residential lots?

☐ No ☐ Yes—specify the total number

d) What is the total area of land for this stage? (square metres)

e) What is the total length of any new road to be constructed at this stage? (metres)

f) What is the total area of land to be contributed for community purposes at this stage? (square metres)

g) Does the proposal involve the construction of a canal or artificial waterway?

☐ No ☐ Yes

h) Does the proposal involve operational work for the building of a retaining wall?

☐ No ☐ Yes

7. Lease/agreement details—how many parts are being created and what is their intended final use?

Intended final use of new parts	Residential	Commercial	Industrial	Other—specify
Number of additional parts created				

8. What are the current and proposed dimensions following the boundary realignment for each lot forming the premises?

Current lot			**Proposed lot**		
Lot plan description	Area (square metres)	Length of road frontage	Lot number	Area (square metres)	Length of road frontage

9. What is the reason for the boundary realignment?

10. What are the dimensions and nature of the proposed easement? (If there are more than two easements proposed please list in a separate table on an extra page and attach to this form.)

Width (m)	Length (m)	Purpose of the easement (e.g. pedestrian access)?	What land is benefitted by the easement?

Mandatory supporting information

11. Confirm that the following mandatory supporting information accompanies this application or request

Mandatory supporting information	**Confirmation of lodgement**	**Method of lodgement**
All applications and requests for reconfiguring a lot		
Site plans drawn to an appropriate scale (1:100, 1:200 or 1:500 are the **recommended** scales) which show the following: • the location and site area of the land to which the application or request relates (***relevant land***) • the north point • the boundaries of the relevant land • any road frontages of the relevant land, including the name of the road • the contours and natural ground levels of the relevant land • the location of any existing buildings or structures on the relevant land • the allotment layout showing existing lots, any proposed lots (including the dimensions of those lots), existing or proposed road reserves, building envelopes and existing or proposed open space (note: numbering is required for all lots) • any drainage features over the relevant land, including any watercourse, creek, dam, waterhole or spring and any land subject to a flood with an annual exceedance probability of 1% • any existing or proposed easements on the relevant land and their function • all existing and proposed roads and access points on the relevant land • any existing or proposed car parking areas on the relevant land • the location of any proposed retaining walls on the relevant land and their height • the location of any stormwater detention on the relevant land • the location and dimension of any land dedicated for community	☒ Confirmed	

purposes • the final intended use of any new lots.		
For a development application – A statement about how the proposed development addresses the local government's planning scheme and any other planning documents relevant to the application. For a request for compliance assessment – A statement about how the proposed development addresses the matters or things against which the request must be assessed.	☒ Confirmed	
A statement addressing the relevant part(s) of the State Development Assessment Provisions (SDAP).	☐ Confirmed ☒ Not applicable	

Notes for completing this form

- For supporting information requirements for requests for compliance assessment, please refer to the relevant matters for which compliance assessment will be carried out against. To avoid an action notice, it is recommended that you provide as much of the mandatory information listed in this form as possible.

Privacy—Please refer to your assessment manager, referral agency and/or building certifier for further details on the use of information recorded in this form.

OFFICE USE ONLY

Date received		Reference numbers	

The *Sustainable Planning Act 2009* is administered by the Department of State Development, Infrastructure and Planning. This form and all other required application materials should be sent to your assessment manager and any referral agency.

Department of State Development, Infrastructure and Planning
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IDAS form 31—Application for preliminary approval varying the effect of a local planning instrument

(*Sustainable Planning Act 2009* version 3.0 effective 1 July 2013)

This form must be used for development applications for a preliminary approval under section 242 of the *Sustainable Planning Act 2009* that seek to vary the effect of any local planning instrument for the land the subject of the application.

You **MUST** complete **ALL** questions that are stated to be a mandatory requirement unless otherwise identified on this form.

For all development applications you must:

- complete *IDAS form 1—Application details*
- complete any other forms relevant to your application
- provide any mandatory supporting information identified on the forms as being required to accompany your application.

Attach extra pages if there is insufficient space on this form.

All terms used on this form have the meaning given in the *Sustainable Planning Act 2009* (SPA) or the Sustainable Planning Regulation 2009.

This form can also be completed online using MyDAS at www.dsdip.qld.gov.au/MyDAS

Mandatory requirements

1. What type of development is proposed?

- ☐ Material change of use—complete Table A
- ☒ Development other than a material change of use—complete Table B
- ☐ Both—provide details below and complete Table A and B

2. How does the application seek to vary the effect of the local planning instrument?
(Tick all applicable boxes.)

Table A

- ☐ By stating that the material change of use or development relating to the material change of use is exempt development
- ☐ By stating that the material change of use or development relating to the material change of use is self-assessable development
- ☐ By stating that the material change of use or development relating to the material change of use is development requiring compliance assessment
- ☐ By stating that the material change of use or development relating to the material change of use is assessable development requiring code or impact assessment, or both code and impact assessment
- ☐ By identifying or including codes for the proposed development—provide details of the codes below

Table B

☐ By stating that the development is exempt development

☐ By stating that the development is self-assessable development

☐ By stating that the development is development requiring compliance assessment

☒ By stating that the development is assessable development requiring code or impact assessment, or both code and impact assessment

☒ By identifying or including codes for the proposed development—provide details of the codes below

Residential 1 Planning Area Code

Non-mandatory requirements

3. Please nominate the period after which the approval should lapse if the proposed development is started but not completed within the period. (Refer to s. 343 of the *Sustainable Planning Act 2009* which sets out when a preliminary approval to which s. 242 of the *Sustainable Planning Act 2009* applies lapses if development is started but not completed.)

Mandatory supporting information

4. Confirm that the following mandatory supporting information accompanies this application

Mandatory supporting information	Confirmation of lodgement	Method of lodgement
Details about the way in which the applicant seeks the approval to vary the effect of any local planning instrument.	☒ Confirmed	
Written statement about the consistency of the proposed variations with aspects of the local planning instrument, other than the aspects sought to be varied.	☒ Confirmed	

Notes for completing this form

- It is recommended that development applications are prepared following best practice standards provided in IDAS *Statutory Guideline 04/09—Preliminary approvals that affect a local planning instrument*.

Privacy—Please refer to your assessment manager, referral agency and/or building certifier for further details on the use of information recorded in this form.

OFFICE USE ONLY

Date received | Reference numbers

The *Sustainable Planning Act 2009* is administered by the Department of State Development, Infrastructure and Planning. This form and all other required application materials should be sent to your assessment manager and any referral agency.

Annexure 2

Title Search

CURRENT TITLE SEARCH
DEPT OF NATURAL RESOURCES AND MINES, QUEENSLAND

Request No: 20001670
Search Date: 15/12/2014 07:40 Title Reference: 50935313
Date Created: 17/12/2013

Previous Title: 50925223

REGISTERED OWNER

Dealing No: 716016426 15/09/2014

NV & JS PTY LTD A.C.N. 600 898 315

ESTATE AND LAND

Estate in Fee Simple

LOT 12 SURVEY PLAN 252360
County of SOLANDER Parish of VICTORY
Local Government: DOUGLAS

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 40067063 (Lot 11 on SP 150463)

2. EASEMENT No 602824361 (A1277) 02/08/1979
BENEFITING THE LAND
OVER EASEMENT B ON RP730945

3. NOTING No 713467027 16/09/2010 at 12:02
EASEMENT: 602824361 (A1277)
THE BURDENING TENEMENT OF THE EASEMENT IS RECORDED UNDER
EASEMENT 601472774 (N905573) OVER TITLE REFERENCES 21523237
AND 21523239

ADMINISTRATIVE ADVICES - NIL
UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

Requested By: D APPLICATIONS SAI GLOBAL

Annexure 3

Code Assessment – Douglas Shire Council Planning Scheme

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
General Requirements				
P1 Buildings and structures compliment the Height of surrounding development and Buildings are limited to two Storeys.	**A1.1** In this Locality the maximum Height of Buildings/structures is 6.5 metres. In addition, the roof (including any ancillary roof features) does not exceed a maximum Height of 3.5 metres above the intersection of the pitching part of the roof and the wall of the Building.	**N/A**	Not applicable.	
P2 Development is connected to all urban services.	**A2.1** Development is connected to available urban services by underground connections, wherever possible. AND/OR Contributions are paid when applicable in accordance with the requirements of the Planning Scheme Policy No. 11 – Water Supply and Sewerage Headworks and Works External Contributions.	✓	Proposal complies.	
P3 Landscaping of development Sites complement the existing character of the Mossman Locality.	**A3.1** Landscaping incorporates the requirements of Planning Scheme Policy No 7 – Landscaping with particular emphasis on appropriate species for this Locality.	✓	Proposal is capable of complying.	
P4 Development Sites are provided with efficient and safe vehicle Access and manoeuvring areas on Site and to the Site, to an acceptable standard for the Locality.	**A4.1** All Roads, driveways and manoeuvring areas on Site and adjacent to the Site are designed and maintained to comply with the specifications set out in the Planning Scheme Policy No 6 – FNQROC Development Manual.	✓	Proposal complies.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Town Centre				
P5 Buildings in the Town Centre are designed and sited to complement the existing distinctive and cohesive character of the retail and business area, including through: a) buildings built to the Frontage to reinforce the existing built-form character; and b) buildings that address the street; and c) development that incorporates awnings and verandahs providing weather protection for pedestrians.	**A5.1** In respect to P5c), development on Front Street, Foxton Avenue, Mill Street, Junction Road and Johnson Road, incorporates a non-transparent cantilevered awning along all Frontages.	**N/A**	Not applicable. The subject site has a physical address of Front Street due to its previous attachment to Mossman State School, however now has no direct connection to Front Street.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P6 Development in the Town Centre is climate responsive, contributes positively to the character of the locality, is complementary in scale to surrounding development, and does not exceed a base Plot Ratio of 0.5:1 and a maximum Plot Ratio of 0.9:1 AND will not achieve the maximum Plot Ratio specified above unless the development incorporates building design features and architectural elements detailed in Planning Scheme No. 2 – Building Design and Architectural Elements (and referred to in the Acceptable Solution).	**A6.1** Development incorporates the following design features and corresponding plot ratio bonuses [in brackets]: a) appropriate roof form and roofing material [10% Plot Ratio Bonus]; and b) appropriate fenestration in combination with roof form [5% Plot Ratio Bonus]; and c) appropriate window openings with window awnings, screens or eaves shading 80% of the window opening – refer Planning Scheme Policy No. 2 – Building Design and Architectural Elements [15% Plot Ratio Bonus]; and d) minimum of 700mm eaves [15% Plot Ratio Bonus]; and e) orientation of the Building to address the street/s [5% Plot Ratio Bonus]; f) sheltered pedestrian Access by unenclosed covered common area walkway of 1.5 metres in width from the car parking area/s to the development [5% Plot Ratio Bonus]; and g) inclusion of windows and balconies to the street façade of the Building [10% Plot Ratio Bonus]; and h) provision of lattice, battens or privacy screens [5% Plot Ratio Bonus]; and i) the overall length of a Building does not exceed 30 metres and the overall length of any continuous wall does not exceed 15 metres [10% Plot Ratio Bonus].	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P7 Development in the Town Centre is predominantly commercial in nature or has a service delivery function.	**A7.1** Development at street level is limited to commercial activities or community services, with residential development limited to minor ancillary residential uses or to tourist accommodation located above Ground Level, or to the rear of the Site at Ground Level.	**N/A**	Not applicable.	
P8 Key elements which contribute to the character and integrity of the Town Centre are retained.	**A8.1** The sense of place which characterises the main town intersection of Foxton Avenue, Mill Street and Junction Road is reinforced with new development or redevelopment contributing to the existing continuity of the built form by being built up to the street Frontage.	**N/A**	Not applicable.	
	A8.2 The cane tram line which runs along Mill Street, the vista down Mill Street to Mt Beaufort and the sugar mill chimney are retained as unique features of the town and its sugar town heritage	**N/A**	Not applicable.	
	A8.3 Views from Front Street of the mountains (from various vantage points) are maintained.	**N/A**	Not applicable.	
	A8.4 Avenue planting within the Town Centre along the centre median of Front Street is maintained and extended to reinforce the character of the Town Centre.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P9 Display Facilities are appropriately located and designed to integrate with the street frontage and provide a proportional street facade to reflect the existing streetscape, with design elements such as glass shop fronts.	**A9.1** Display Facilities are only located within the Town Centre and within areas included in the Commercial Planning Area.	**N/A**	Not applicable.	
	A9.2 Display Facilities are built to the front alignment addressing the street Frontage and continue the scale of the existing built form and provide car parking spaces at the rear of the Site.	**N/A**	Not applicable.	
	A9.3 The exterior colours of the Building complement the existing colours of surrounding Buildings and are in keeping with the character of the Town Centre.	**N/A**	Not applicable.	
	A9.4 Any air conditioning plant is screened from the street Frontage and the public view by the use of architectural features as referred to in Planning Scheme Policy No 2 – Building Design and Architectural Elements	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P10 Commercial expansion of Lot 10 on RP 891901 in Front Street is integrated with the existing shopping facilities.	**A10** Any future expansion of the shopping development on this site incorporates the following design parameters: - access is limited to the existing access from Front Street; - any additional access is limited to Johnston Road; - any expansion complements the existing development in scale, height, roof alignment and colour; - any expansion is integrated with the existing development such that the final development functions as one shopping/commercial development; - any expansion takes account of adjacent (future) residential development and incorporates service areas, car parking and other utilities which are screened to protect the residential amenity of the area; and - provision is made in the final layout and design for pedestrian access to the shopping development from adjacent residential areas.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Local Centres				
P11 Local Centres outside the Town Centre service the surrounding residential area and do not adversely impact on the viability of the Mossman Town Centre.	**A11.1** The Net Lettable Area of the existing Local Centre does not exceed 300 m2 and is apportioned equally between the total number of lots which comprise the Local Centre.	**N/A**	Not applicable.	
	A11.2 Any proposed new Local Centre with a maximum Net Lettable Area of 300m2, only establishes when an identifiable population of 1000 persons is located more than 2 km from the existing Local Centre or the Town Centre.	**N/A**	Not applicable.	
	A11.3 Any new Local Centre is located at a "gateway" location to a residential area which best serves the surrounding residential area.	**N/A**	Not applicable.	
Residential Development				

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P12 Residential development, other than a House, is climate-responsive, contributes positively to the character of the Locality, is complementary in scale to surrounding development and does not exceed the identified Plot Ratio designation on the Locality Map (that is): - land designated Medium Scale has a base Plot Ratio of 0.3:1 and a maximum Plot Ratio of 0.5:1; OR - land designated Low Scale has a base Plot Ratio of 0.25:1 and a maximum Plot Ratio of 0.4:1. AND Will not achieve the maximum Plot Ratio specified above unless the development incorporates building design features and architectural elements detailed in Planning Scheme Policy No 2 – Building Design and Architectural Elements (and referred to in the Acceptable Solution).	**A12.1** Development incorporates the following design features and corresponding plot ratio bonuses [in brackets]: a) appropriate roof form and roofing material [10% Plot Ratio Bonus]; and b) appropriate fenestration in combination with roof form [5% Plot Ratio Bonus]; and c) appropriate window openings with window awnings, screens or eaves shading 80% of the window opening – refer Planning Scheme Policy No. 2 – Building Design and Architectural Elements [15% Plot Ratio Bonus]; and d) minimum of 700mm eaves [15% Plot Ratio Bonus]; and e) orientation of the Building to address the street/s [5% Plot Ratio Bonus]; f) sheltered pedestrian Access by unenclosed covered common area walkway of 1.5 metres in width from the car parking area/s to the development [5% Plot Ratio Bonus]; and g) inclusion of windows and balconies to the street façade of the Building [10% Plot Ratio Bonus]; and h) provision of lattice, battens or privacy screens [5% Plot Ratio Bonus]; and i) the overall length of a Building does not exceed 30 metres and the overall	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	length of any continuous wall does not exceed 15 metres[10% Plot Ratio Bonus].			
Other Development				
P13 Good quality agricultural land, particularly sugar cane land, within the environs of the locality is protected from urban or incompatible development.	**A13.1** No urban development encroaches into the Rural Planning Area located within the Locality boundary. UNLESS A buffer is provided in accordance with the requirements of State Planning Policy 1/92 and Planning Guidelines – Separating Agricultural and Residential Land Uses (DNR 1997).	**N/A**	Not applicable.	
P14 Industrial development is located in existing or identified industrial areas to facilitate efficient use of industrial land and to effectively service the needs of the Shire	**A14.1** Class A Industry uses are located in the Industry Planning Area at the southern end of Mossman around Sawmill Road to effectively service the Shire, particularly Port Douglas. **A14.2** Class B Industry uses are located in the Industry Planning Area at the northern end of Mossman around the Mill to service the needs of the Mill and to consolidate allied industrial uses.	**N/A** **N/A**	Not applicable. Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P15 Industrial land and uses are protected from incompatible urban development.	**A15.1** No residential development encroaches into the Industry planning Area.	**N/A**	Not applicable.	
	A15.2 Buffers are provided between Industry uses and incompatible urban uses of 40 metres and include Landscaping for screening or incorporate land use activities which are compatible to interface with the adjacent Industry uses.	**N/A**	Not applicable.	
Community Facilities				
P16 Community facilities are provided to service the local community in convenient and accessible locations.	**A16.1** Community facilities are conveniently located within or near the Town Centre and in close proximity to existing community facilities to service the needs of local residents.	✓	The proposed development includes open space areas, a walking track and parkland which includes a playground and BBQ facilities, and is within close proximity to the Township, servicing the proposed residential Lots and wider community.	
	A16.2 Public car parking areas are provided within or in close proximity to the Town Centre, existing community facilities, sporting/recreation grounds.	**N/A**	Not Applicable.	
Flood Immunity for Residential Development				

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P17 Residential development does not occur on flood prone land.	**A17.1** Residential development occurs on land on or above Q100 flood level.	**A/S**	Whilst the majority of the subject site is at Q100 level, Lots 1, 6 and 9 are below the Q100 level. These Lots will be filled to comply with Q100 level, and will be further addressed in the Design Phase.	
	A17.2 Development of Lot 3 on RP 720296, Junction Road is undertaken in accordance with the recommendations of a Drainage/Flood Study which outlines the necessary improvements to be undertaken on the Site to make it suitable for residential development and avoid impacts on adjoining land. AND Council may enter into a partnership to investigate/address the drainage and flooding issues which affect the general area.	**N/A**	Not applicable.	
Scenic Amenity and Conservation Areas				
P18 Development does not adversely impact on Scenic Amenity, natural vegetation or Watercourses, in particular the Mossman River, the South Mossman River, Parker Creek and Marrs Creek.	No Acceptable Solution. (Information that the Council may request to demonstrate compliance with the Performance Criteria is outlined in Planning Scheme Policy No 10 – Reports and Information the Council May Request, for code and impact assessable development).	✓	Proposal complies. A 10m setback/buffer is located along the boundary of Parker Creek to prevent impacts of the development on the natural environment.	
Special Management Area				

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Special Management Area 1 – Foxton Avenue				
P19 Land described as Lot 31 on SP 121816 adjacent to Foxton Avenue is developed taking account of the opportunities and constraints and existing topographic and man made features of the whole of the Site, and in particular, that part of the Site identified as Investigation Zone (vegetation and flooding).	No Acceptable Solution (Information that the Council may request to demonstrate compliance with the Performance Criteria is outlined in Planning Scheme Policy No 10 – Reports and Information the Council May Request, for this Special Management Area.)	**N/A**	Not applicable.	
P20 Development located on the Site is free from flood inundation and does not adversely affect current drainage regimes	**A20.1** The extent of future urban development is established following flood investigations of the Site. **A20.2** Residential development occurs on land on or above the Q100 flood level.	**N/A** **N/A**	Not applicable. Not applicable.	
P21 Development on the Site does not impact on the environmental values of Marrs Creek.	No Acceptable Solution (Information that the Council may request to demonstrate compliance with the Performance Criteria is outlined in Planning Scheme Policy No 10 – Reports and Information the Council May Request, for code and impact assessable development).	**N/A**	Not applicable.	
P22 Development does not adversely impact on the operations of the cane rail line.	**A22.1** Residential Buildings are Setback 25 metres from the common boundary with the cane rail line and the common boundary is fenced.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P23 Where residential development is sited adjacent to a State-Controlled Road the residential amenity of residents is protected and Access to the State Controlled Road is minimised.	**A23.1** Residential development sited adjacent to a State-Controlled Road incorporates noise attenuation measures to protect the residential amenity of residents.	**N/A**	Not applicable.	
	A23.2 Vehicular Access to the Foxton Avenue is limited to one Access point with internal vehicular and pedestrian connectivity provided throughout the Site, if development occurs in stages.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Consistent and Inconsistent Uses				
P1 The establishment of uses is consistent with the outcomes sought for the Residential 1 Planning Area.	**A1.1** Uses identified as inconsistent uses in the Assessment Table are not established in the Residential 1 Planning Area.	✓	Proposal complies. The proposal is seeking a preliminary approval to change the current 'Community and Recreational Facilities' Planning Area to 'Residential 1' Planning Area and Reconfiguration of a Lot.	
Site Coverage – Other than a House				
P2 The Site Coverage of all Buildings does not result in a built form that is bulky or visually obtrusive.	**A2.1** Any form of development, other than a House, has a Site Coverage which does not exceed the Site Coverage specified for Multi-Unit Housing outlined below in this Code.	**N/A**	Not applicable.	
Building Setbacks – Other than a House				
P3 All Buildings are Setback to: - maintain the character of residential neighbourhoods; and - achieve separation from neighbouring Buildings and from Road Frontages27.	**A3.1** Any form of development, other than a House, satisfies the same Setback requirements as specified for MultiUnit Housing outlined below in this Code.	**N/A**	Not applicable.	
Fencing				
P4 Any perimeter fencing to the Frontage of a Site in the Residential 1 Planning Area is not visually obtrusive and does not detract from the residential character of the area.	**A4.1** Any fencing provided to the Main Street Frontage of the Site is a maximum of 1.2 metres in Height and does not present a blank facade to the street. AND Fencing at the side and the rear boundaries of the Site is a maximum of 1.8 metres in Height.	✓ ✓	Proposal is capable of complying. Proposal is capable of complying.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Landscaping – Other than a House				
P5 A Site which is developed for any purpose, other than a House, has Landscaping which is functional, provides visual interest and form, incorporates native vegetation and provides privacy to adjacent residential uses.	**A5.1** Within the Site Frontage Setback area a minimum width of 2 metres of Landscaping including 60% Dense Planting is provided. AND Within the side and rear Setback areas a minimum width of 1.5 metres of Landscaping including 60% Dense Planting is provided in accordance with the Landscaping Code.	**N/A**	Not applicable.	
	A5.2 Where the proposed use incorporates or requires the provision of a public open space recreation/landscape area, that area is connected and integrated with the development.	**N/A**	Not applicable.	
Multi-Unit Housing				

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P6 In new residential areas, Multi-Unit Housing: a. is limited to a small proportion of available lots (eg. 15% of the total number of new lots), with a preference for corner allotments; and b. is dispersed to ensure conventional residential detached Houses dominate the streetscape; and c. uses building forms (eg. development footprint, height, massing, positioning of garages to reduce their dominance, and architectural detail) that match or complement those of the established detached Houses in the area.	No Acceptable Solution.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P7 Multi-Unit Housing is sited and designed to complement the residential amenity of the area. A Multi-Unit Housing development incorporates 1 Dwelling Unit per 500 m2 of Site area and with a maximum of 3 Dwelling Units per Site area.	**A7.1** Multi-Unit Housing establishes on a lot with a minimum area of 1000 m2 and the lot has a minimum Frontage of 25 metres.	**N/A**	Not applicable.	
	A7.2 A Dwelling Unit in a Multi-Unit Housing development incorporates a maximum number of 3 bedrooms (or rooms capable of being used as a bedroom).	**N/A**	Not applicable.	
	A7.3 Site Coverage of Multi-Unit Housing is limited to: - 40% for 1 Storey development; or - 35% for 2 Storey development.	**N/A**	Not applicable.	
	A7.4 Building Setbacks for Multi-Unit Housing are: - 6 metres to the Main Street Frontage - 4 metres to any secondary Road Frontage - 6 metres to the rear boundary - 2.5 metres to the side boundary for 1 Storey development or 3 metres to the side boundary for 2 Storey development.	**N/A**	Not applicable.	
	A7.5 A minimum of 40% of the Site is provided as Landscaping and Recreation Area. AND	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS		SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
		A minimum of 4 metres by 4 metres of Landscaping and Recreation Area is provided for each Dwelling Unit which is directly accessible from a habitable living room.	**N/A**	Not applicable.	
		OR			
		At least 50% of the total Landscaping and Recreation Area is provided as one communal area having a minimum dimension of 6 metres.	**N/A**	Not applicable.	
	A7.6	Each Dwelling Unit is provided with a designated refuse area which is screened from public view.	**N/A**	Not applicable.	
	A7.7	Balconies, patios and similar spaces are not enclosed or capable of being used as a Habitable Room.	**N/A**	Not applicable.	
		AND			
		Balconies, patios and similar spaces are designed to be open and of light weight appearance with a maximum of 20% of the facade being fully enclosed.	**N/A**	Not applicable.	
Buffering Incompatible Land Uses					

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P8 A buffer is provided to separate agricultural activities that create odour, excessive noise or use agricultural chemicals, (including Aquaculture and Intensive Animal Husbandry), from residential development.	**A8.1** Any reconfiguration of Residential 1 land which shares a boundary with land in the Rural Planning Area provides a buffer in accordance with the requirements of State Planning Policy 1/92 and Planning Guidelines – Separating Agricultural and Residential Land Uses (DNR 1997). OR No Acceptable Solution. (Information that the Council may request to demonstrate compliance with the Performance Criteria is outlined in Planning Scheme Policy No 10 – Reports and Information the Council May Request, for code and impact assessable development).	✓	Proposal complies. The eastern boundary of the lot shares a boundary with land in the Rural Planning Area. Parker Creek provides a sufficient setback/buffer between residential and rural land.	
Sloping Sites				

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P9 Building/structures are designed and sited to be responsive to the constraints of sloping Sites.	**A9.1** Building/structures are Erected on land with a maximum slope not exceeding 15%.	✓	Proposal complies.	
	OR			
	Development proposed to be Erected on land with a maximum slope between 15% and 33% is accompanied by a Geotechnical Report prepared by a qualified engineer at development application stage.	**N/A**	Not applicable.	
	OR			
	Development proposed to be Erected on land with a maximum slope above 33% is accompanied by a Specialist Geotechnical Report prepared by a qualified engineer at development application stage which includes signoff that the Site can be stabilised.	**N/A**	Not applicable.	
	AND			
	Any Building/structures proposed to be Erected on land with a maximum slope above 15% are accompanied by a an additional Geotechnical Report prepared by a qualified engineer at building application stage.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	(Information that the Council may request as part of the Geotechnical Report are outlined in Planning Scheme Policy No 10 – Reports and Information the Council May Request, for code and impact assessable development.)			
P10 The building style and construction methods used for development on sloping Sites are responsive to the Site constraints.	**A10.1** A split level building form is utilised.	**N/A**	Not applicable.	
	A10.2 A single plane concrete slab is not utilised.	**N/A**	Not applicable.	
	A10.3 Any voids between the floor of the Building and Ground Level, or between outdoor decks and Ground Level, are screened from view by using lattice/batten screening and/or Landscaping.	**N/A**	Not applicable.	
P11 Development on sloping land minimises any impact on the landscape character of the surrounding area.	**A11.1** Buildings/structures are sited below any ridgelines and are sited to avoid protruding above the surrounding tree level.	**N/A**	Not applicable.	
P12 Development on sloping land ensures that the quality and quantity of stormwater traversing the Site does not cause any detrimental impact to the natural environment or to any other Sites	**A12.1** All stormwater drainage discharges to a lawful point of discharge and does not adversely affect downstream, upstream, underground stream or adjacent properties.	**N/A**	Not applicable.	
Sustainable Siting and Design of Housing on Sloping Sites				

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P13 A House sited on hillside land is sited in an existing cleared area, or in an area approved for Clearing.	**A13.1** A House is sited in an existing cleared area or in an area approved for Clearing under the Local Law – Vegetation Management but which is not cleared until development occurs. The Clearing is limited to a maximum area of 800 m2 and is sited clear of the High Bank of any Watercourse. (The 800m2 area of Clearing does not include an access driveway.)	**N/A**	Not applicable.	
	A13.2 The approved area for the Clearing of the House is not cleared until a Building Permit is issued.	**N/A**	Not applicable.	
P14 A House sited on hillside land is sited and designed so that it is subservient to the surrounding natural environment.	**A14.1** A House is effectively screened from view by existing native trees in designated Setback area/s, or by the planting of additional native trees endemic to the local area.	**N/A**	Not applicable.	
P15 The exterior finishes of a House complements the surrounding natural environment.	**A15.1** The exterior finishes and colours of Building/s are non reflective and complement the colours of the surrounding vegetation and viewshed.	**N/A**	Not applicable.	
P16 A House is designed to be energy efficient and functional in a humid tropical rainforest environment.	**A16.1** The development incorporates building design features and architectural elements detailed in Planning Scheme Policy No 2 – Building Design and Architectural Elements.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
General Requirements				
Consistent and Inconsistent Uses				
P1 The establishment of uses is consistent with the outcomes sought for the Community and Recreational Facilities Planning Area	**A1.1** Uses identified as inconsistent uses in the Assessment Table are not established in the Community and Recreational Facilities Planning Area.	**A/S**	The development application subject to a Preliminary Approval to override the Planning Scheme with uses associated with the Residential 1 Planning Area.	
Building/Structure Siting				
P2 Buildings/structures are Setback to ensure that they are compatible with the character of the area and do not adversely affect other uses, particularly residential uses.	**A2.1** Buildings are Setback not less than: - a minimum of 8 metres from a State-Controlled Road; or - in other cases, a minimum of 6 metres from the Main Street Frontage; - 4 metres from any secondary Road Frontage; and - 3 metres from side and rear boundaries.	**N/A**	Not applicable.	
Site Access and Car Parking				
P3 Car parking areas are Setback from the boundaries of the Site to ensure a high standard of amenity and to ensure that the amenity of adjacent residential land, residential uses or other sensitive Sites is protected.	**A3.1** Car parking areas are Setback; - 6 metres from the Road Frontage/s of the Site; and - 3 metres from any other Site boundary.	**N/A**	Not applicable.	
P4 The Setbacks to car parking areas are landscaped to enhance the amenity of the Site and to provide a buffer to adjacent residential land, residential uses and other sensitive Sites.	**A4.1** The Setback between the Road Frontage/s and the car parking area is landscaped with Dense Planting	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Night Lighting				
P5 Night lighting of playing fields and club facilities do not adversely affect the amenity of adjacent areas or uses**.**	**A5.1** Where the Site adjoins land included in a Residential 1, Residential 2 or Tourist and Residential Planning Area or land developed partially or wholly for residential purposes, illumination levels parallel to and at a distance of 1.5 metres outside the Site for a Height of 10 metres do not exceed 8 lux in either the vertical or horizontal plane. OR Where regional standard facilities require a lux level of 100 – 200 lux shielding mechanisms and the correct design and positioning of the lights ensure minimal spillage to adjacent land.	**N/A**	Not applicable.	
Landscaping				
P6 Landscaping is functional, provides visual interest and form, incorporates native vegetation, provides screening and enhances the visual appearance of the development and provides for useable public recreation/congregation areas, where appropriate.	**A6.1** All Site boundary Setback areas are provided with Dense Planting for a minimum distance of 2 metres or as specified above in A3.1. OR A greater distance specified in a Land Use Code.	**N/A**	Not applicable.	
Sloping Sites				

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P7 Building/structures are designed and sited to be responsive to the constraints of sloping Sites.	**A7.1** Building/structures are Erected on land with a maximum slope not exceeding 15%. OR Development proposed to be Erected on land with a maximum slope between 15% and 33% is accompanied by a Geotechnical Report prepared by a qualified engineer at development application stage. OR Development proposed to be Erected on land with a maximum slope above 33% is accompanied by a Specialist Geotechnical Report prepared by a qualified engineer at development application stage which includes signoff that the Site can be stabilised. AND Any Building/structures proposed to be Erected on land with a maximum slope above 15% are accompanied by an additional Geotechnical Report prepared by a qualified engineer at building application stage. (Information that the Council may request as part of the Geotechnical Report are outlined in Planning Scheme Policy No 10 – Reports and Information the Council May Request, for code and impact assessable development.)	**N/A**	Development application is for the reconfiguration of a lot. However, the site is generally flat and the slope does not exceed 15%.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P8 The building style and construction methods used for development on sloping Sites are responsive to the Site constraints.	**A8.1** A split level building form is utilised.	**N/A**	Not applicable.	
	A8.2 A single plane concrete slab is not utilised.	**N/A**	Not applicable.	
	A8.3 Any voids between the floor of the Building and Ground Level, or between outdoor decks and Ground Level, are screened from view by using lattice/batten screening and/or Landscaping	**N/A**	Not applicable.	
P9 Development on sloping land minimises any impact on the landscape character of the surrounding area.	**A9.1** Buildings/structures are sited below any ridgelines and are sited to avoid protruding above the surrounding tree level.	**N/A**	Not applicable.	
P10 Development on sloping land ensures that the quality and quantity of stormwater traversing the Site does not cause any detrimental impact to the natural environment or to any other Sites.	**A10.1** All stormwater drainage discharges to a lawful point of discharge and does not adversely affect downstream, upstream, underground stream or adjacent properties.	**N/A**	Not applicable. Site is not on sloping land however, appropriate stormwater drainage discharge points are allocated which does not adversely affect downstream, upstream, underground stream or adjacent properties.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Disturbance of Acid Sulfate Soils				
P1 The release of acid and associated metal contaminants into the environment are avoided either by: - not disturbing Acid Sulfate Soils; or by - preventing the potential impacts of any disturbance through appropriate Site planning, treatment and ongoing management.	**A1.1** The disturbance of Acid Sulfate Soils is avoided by: - not excavating or removing more than 100 m3 of material identified as containing or potentially containing Acid Sulfate Soils; - not permanently or temporarily extracting groundwater that results in the aeration of previously saturated Acid Sulfate Soils; and - demonstrating that any filling in excess of 500 m3 of material to depths greater than an average depth of 0.5 metres will not result in ground water extrusion from Acid Sulfate Soils and the aeration of previously saturated Acid Sulfate Soils from the compaction or movement of those soils.	✓	The proposal complies. Filling is required in some locations on the proposed development as a mitigation strategy for sewage and flood inundation. Approximate fill levels will be 2,600m3. This will be further addressed in the Design Phase and will include strategies of avoiding Acid Sulfate Soils.	
	A2.1 Site planning, treatment and ongoing management are undertaken so that: - acid and metal contaminants are not generated and acidity is neutralised; - untreated Acid Sulfate Soils are not taken off-Site unless this is to an alternative location for treatment; and - surface and groundwater flows from areas containing Acid Sulfate Soils do not release leachate containing acid or metal contaminants into the environment.	✓	The proposal complies. Filling is required in some locations on the proposed development as a mitigation strategy for sewage and flood inundation. Approximate fill levels will be 2,600m3. This will be further addressed in the Design Phase and will include strategies of avoiding Acid Sulfate Soils.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Identification and Management of Acid Sulfate Soils				
P2 The location and extent of Acid Sulfate Soils are identified on the development Site and appropriately management so as to avoid the release of acid and associated metal contaminants into the environment.	No Acceptable Solution. (Information that the Council may request to demonstrate compliance with the Performance Criteria is outlined in Planning Scheme Policy No 9 – Reports and Information the Council May Request, for code and impact assessable development).	✓	The proposal complies. Filling is required in some locations on the proposed development as a mitigation strategy for sewage and flood inundation. Approximate fill levels will be 2,600m3. This will be further addressed in the Design Phase and will include strategies of avoiding Acid Sulfate Soils.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Bushfire				
P1 Development does not compromise the safety of people or property from bushfire.	**A1.1** Any development on land identified as High Risk Hazard on any Natural Hazards Overlay on any Locality Map complies with the relevant requirements of State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide. AND Development complies with a Bushfire Management Plan prepared for the site.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P2 Development maintains the safety of people and property by: - avoiding areas of High or Medium Risk Hazard; or - mitigating the risk through: o lot design and the siting of Buildings; and o including firebreaks that provide adequate: ▪ Setbacks between Building/structures and hazardous vegetation, and ▪ Access for fire fighting/other emergency vehicles; - providing adequate Road Access for fire fighting/other emergency vehicles and safe evacuation; and - providing an adequate and accessible water supply for firefighting purposes	**A2.1** Development is located on a Site that is not subject to High or Medium Risk Hazard. OR For all development (if development is proposed to be located on a Site that is subject to High or Medium Risk Hazard), then: Buildings and structures on lots greater than 2500 m2: - are sited in locations of lowest hazard within the lot; and - achieve Setbacks from hazardous vegetation of 1.5 times the predominant mature canopy tree Height or 10 metres, whichever is the greater; and - 10 metres from any retained vegetation strips or small areas of vegetation; and - are sited so that elements of the development least susceptible to fire are sited closest to the bushfire hazard. Building and structures on lots less than or equal to 2500 m2, maximise Setbacks from hazardous vegetation. AND	**A/S**	The proposal is mainly within the low bushfire risk area, although the southern portion of the site is considered medium bushfire risk. A 10m setback from surrounding vegetation is proposed. Should Council consider it necessary, a Bushfire Management Plan will be undertaken.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	For uses involving new or existing Buildings with a Gross Floor Area greater than 50 m2 each lot has: - a reliable reticulated water supply that has sufficient flow and pressure characteristics for fire fighting purposes at all times (minimum pressure and flow is 10 litres a second at 200 kPa); or - an on Site water storage of not less than 5000 litres (eg. Accessible dam or tank with fire brigade tank fittings, swimming pool).			
	A2.2 For development that will result in multiple Buildings or lots (if development is proposed to be located on a Site that is subject to High or Medium Risk Hazard), then: Residential lots are designed so that their size and shape allow for: - efficient emergency Access to Buildings for fire fighting appliances (eg. by avoiding long narrow lots with long Access drives to buildings); and - Setbacks and Building siting in accordance with 2.1 (a) above. AND	✓	Proposal complies.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	Firebreaks are provided by: - a perimeter Road that separates lots from areas of bushfire hazard and that Road has: - a minimum cleared width of 20 metres; and - a constructed Road width and all-weather standard complying with Council standards. OR - where it is not practicable to comply with fire break provisions above, maintenance trails are located as close as possible to the boundaries of the lots and the adjoining bushland hazard, and the fire/maintenance trails: - have a minimum cleared width of 6 metres; and - have a formed width and gradient, and erosion control devices to Council standards; and - have vehicular Access at each end; and - provide passing bays and turning areas for fire fighting applicants; and - are either located on public land, or within an Access easement that is granted in favour of the Council and Queensland Fire Rescue Service (QFRS). AND			

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	- Sufficient cleared breaks of 6 metres minimum width in retained bushland within the development (eg. Creek corridors and other retained vegetation) to allow burning of sections and Access for bushfire response. AND Roads are designed and constructed in accordance with applicable Council and State government standards and: - Have a maximum gradient of 12.5%; and - Exclude a cul-de-sac, except where a perimeter road isolates the development from hazardous vegetation or the cul-de-sacs are provided with an alternative Access linking the cul-de-sac to other through roads.			
P3 Public safety and the environment are not adversely affected by the detrimental impacts of bushfire on hazardous materials manufactured or stored in bulk.	**A3.1** Development complies with a bushfire Management Plan prepared for the site	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Development in Areas of Natural and Scenic Amenity Value				
P1 Where a development within a DDA triggers this Code, the natural and environmental values of the areas of Remnant Vegetation and/or Watercourse/s are protected from inappropriate development.	**A1.1** Buildings/structures Access Roads/car parking, infrastructure and landscape/recreation facilities are constructed within the DDA identified on a Site Plan drawn to scale.	**N/A**	Not applicable.	
	A1.2 Where internal Roads are required to service the development, the Roads are located within a DDA identified on a Site Plan drawn to scale. (Information that the Council may request to demonstrate compliance with the Performance Criteria is outlined in Planning Scheme Policy No 8 – Natural Areas and Scenic Amenity and Planning Scheme Policy No 10 – Reports and Information the Council May Request, for code and impact development.	✓	Proposal complies.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P2 Development does not adversely impact on the natural and environmental values and Scenic Amenity of areas identified as Remnant Vegetation and/or Watercourse/s.	**A2.1** Where development occurs, it is located on that part of the Site which poses the least threat to the natural and environmental values and Scenic Amenity, for example: - adjacent to existing development; - within an existing cleared area; - within a disturbed area with little potential for rehabilitation; - within an area close to an Access Road; - removed from an identified area of important habitat.	✓	The proposal complies. Proposed development is located within an area adjacent to an existing development, is within a cleared area and is not located in an identified area of important habitat. The proposed development abuts a watercourse and riparian vegetation and design and mitigation measures are in place to prevent adverse impacts on the natural and environmental values abutting the site.	
	A2.2 Development within the DDA is sited to minimise visual intrusion on the Site and the surrounding landscape.	✓	Proposal complies.	
	A2.3 No continuous boundary fence lines or barriers are Erected on an approved development Site within a DDA identified on a Site Plan drawn to scale.	**N/A**	Not applicable.	
	A2.4 Infrastructure, such as water mains, sewers, electricity and telecommunication services, is sited underground, wherever reasonable, to protect Scenic Amenity, and is located within a DDA on a Site Plan drawn to scale.	✓	Proposal is capable of complying.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	A2.5 Internal Roads associated with the development are designed and constructed to achieve a low speed environment.	✓	The proposal complies.	
	A2.6 Roads and infrastructure services do not cross the Setback area/riparian corridor; or if this is not possible, the number of crossings is minimised.	✓	The proposal complies.	
	A2.7 Setback areas/riparian corridors are provided in accordance with A4.1, A4.2, A4.3 and A4.4 below; AND The lowest intensity of development occurs adjacent to any Setback area/riparian corridor, and in the case of reconfiguration, larger lots are located adjacent to any Setback area/riparian corridor.	✓	The proposal complies.	
	A2.8 There is no fragmentation or alienation of any Remnant Vegetation.	✓	The proposal complies. No remnant vegetation will be cleared, removed or fragmented.	
	A2.9 Any natural, environmental or Scenic Amenity value of any balance area outside the DDA is protected.	✓	The proposal complies.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P3 Any development involving filling and excavation minimises detrimental impacts on any aquatic environment.	No Acceptable Solution. (Information that the Council may request to demonstrate compliance with the Performance Criteria is outlined in Planning Scheme Policy No 8 – Natural Areas and Scenic Amenity and Planning Scheme Policy No 10 – Reports and Information the Council May Request, for code and impact assessable development).	✓	The proposal complies. Filling of some Lots is required as a mitigation strategy. Further details will be provided in the Design Phase, however strategies will be in place to avoid detrimental impacts on Parker Creek.	
Setback Areas/Riparian Corridors				
P4 Setback areas/riparian corridors adjacent to Watercourses are provided/maintained or re-established and revegetated with species endemic to the local area.	**A4.1** For residential reconfiguration (Residential 1, Residential 2 or Rural Settlement Planning Area), Aquaculture, Tourist Activities, Industrial Activities and other large scale developments or development likely to have an impact on water quality of adjacent Watercourse/s any degraded sections of the Setback area/riparian corridor are revegetated with endemic species typical of the riparian corridor in the area.	**N/A**	Not applicable. All existing vegetation is to be retained and therefore there are no degraded sections of the setback area/riparian corridor.	
	A4.2 Revegetation occurs in accordance with a Landscape Plan prepared by a suitably qualified professional in compliance with the requirements of Planning Scheme Policy No 8 – Natural Areas and Scenic Amenity, Landscaping Code and Planning Scheme Policy No 7 – Landscaping.	**N/A**	Not applicable. All existing vegetation is to be retained and therefore there are no degraded sections of the setback area/riparian corridor.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	A4.3 The minimum width of the Setback area/riparian corridor, measured out from the shoulder of each high bank, for the respective categories of Watercourses, where a riparian corridor of vegetation already exists is: - Category 1 – Major Perennial Watercourse – 30 metres - Category 2 – Perennial Watercourse – 20 metres - Category 3 – Minor Perennial – 10 metres, AND buildings are sited clear of the Setback area/riparian corridor, in accordance with the relevant Setbacks outlined above. OR The minimum width of the Setback area/riparian corridor, measured out from the shoulder of each high bank, for the respective categories of Watercourses, where no riparian corridor of vegetation already exists is: - Category 1 – Major Perennial Watercourse – 10 metres - Category 2 – Perennial Watercourse – 5 metres - Category 3 – Minor Perennial – 2.5 metres,	✓	The proposal complies. Parker Creek is identified as a Minor Perennial Watercourse which includes riparian vegetation. A 10m setback buffer measured from the shoulder of each high bank is included in the design.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	AND buildings are sited clear of the Setback area/riparian corridor, in accordance with the relevant Setbacks above. **A4.4** Native vegetation within the Setback area/riparian corridor, other than identified noxious and environmental weeds, is retained.	✓	The proposal complies. No remnant vegetation will be cleared, removed or fragmented.	
Use of Setback Areas/Riparian Corridors				
P5 Any use of a Setback area/riparian corridor does not adversely affect the integrity of the Setback area/riparian corridor.	**A5.1** Only low key, passive, low impact recreational facilities, including pedestrian and cycle paths or boardwalks, are located within the Setback area/riparian corridor. **A5.2** The location of low key, passive, low impact recreational facilities, including pedestrian and cycle paths or boardwalks within the Setback area/riparian corridor, does not affect the connectivity function and landscape/environmental or Scenic Amenity values of the Setback area/riparian corridor.	✓ ✓	The proposal complies. Open space areas and a walking track are located within the setback area. The proposal complies.	
Retaining and Protecting Highly Visible Areas				
P6 Any development sited wholly or partially on land with a slope greater than 15% protects the Scenic Amenity values of the land from inappropriate and visually prominent development.	**A6.1** Land with a slope greater than 15% and including Remnant Vegetation remains undeveloped and in its natural state.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	A6.2 Any development remains unobtrusive and sited below the tree line and ridge line. (Information that the Council may request to demonstrate compliance with the Performance Criteria is outlined in Planning Scheme Policy No 8 – Natural Areas and Scenic Amenity and Planning Scheme Policy No 10 – Reports and Information the Council May Request, for code and impact assessable development).	✓	The proposal complies.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Elements of the Code				
General Requirements				
P1 All filling and excavation work does not create a detrimental impact on the slope stability, erosion potential or visual amenity of the Site or the surrounding area.	**A1.1** The height of cut and/or fill, whether retained or not, does not exceed 2 metres in height. AND Cuts in excess of those stated in A1.1 above are separated by benches/terraces with a minimum width of 1.2 metres that incorporate drainage provisions and screen planting.	✓	Proposal is capable of complying.	
	A1.2 Cuts are supported by batters, retaining or rock walls and associated benches/terraces are capable of supporting mature vegetation.	✓	Proposal is capable of complying.	
	A1.3 Cuts are screened from view by the siting of the Building/structure, wherever possible.	✓	Proposal is capable of complying.	
	A1.4 Topsoil from the Site is retained from cuttings and reused on benches/terraces.	✓	Proposal is capable of complying.	
	A1.5 No crest of any cut or toe of any fill, or any part of any retaining wall or structure, is located closer than 600 mm To any boundary of the property, unless the prior written approval of the adjoining landowner and the Council, has been obtained.	✓	Proposal is capable of complying.	
	A1.6 Non-retained cut and/or fill on slopes are stabilised and protected against scour and erosion by suitable measures, such as grassing, Landscaping or other protective/aesthetic measures.	✓	Proposal is capable of complying.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Visual Impact and Site Stability				
P2 Filling and excavation are carried out in such a manner that the visual/scenic amenity of the area and the privacy and stability of adjoining properties is not compromised.	**A2.1** The extent of filling or excavation does not exceed 40% of the Site area or 500 m2 whichever is the lesser. EXCEPT THAT **A2.1** does not apply to reconfiguration of 5 lots or more. **A2.2** Filling and excavation does not occur within 2 metres of the Site boundary.	**N/A** ✓ ✓	Not applicable. However, filling of the site does not exceed 40% of the site area. Proposal complies. Proposal is capable of complying.	
Flooding and Drainage				
P3 Filling and excavation does not result in a change to the run off characteristics of a Site which then have a detrimental impact upon the Site or nearby land or adjacent Road reserves.	**A3.1** Filling and excavation does not result in the ponding of water on a Site or adjacent land or Road reserves. **A3.2** Filling and excavation does not result in an increase in the flow of water across a Site or any other land or Road reserves. **A3.3** Filling and excavation does not result in an increase in the volume of water or concentration of water in a Watercourse and overland flow paths. **A3.4** Filling and excavation complies with the specifications set out in the Planning Scheme Policy No 6 – FNQROC Development Manual.	✓ ✓ ✓ ✓	Proposal is capable of complying. Proposal is capable of complying. Proposal is capable of complying. Proposal is capable of complying.	
Water Quality				
P4 Filling and excavation does not result in a reduction of the water quality of receiving waters.	**A4.1** Water quality is maintained to comply with the specifications set out in the Planning Scheme Policy No 6 – FNQROC Development Manual.	✓	Proposal is capable of complying.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Elements of the Code				
Area and Dimensions of Lots				
P1 Lots are of sufficient area and dimensions to meet the requirements of the users and accommodate the form of development likely to be constructed in the respective Planning Areas, together with the open space, Landscaping, Access and car parking associated with the particular form of development.	**A1.1** Lots comply with the area and dimension identified for lots in the respective Planning Areas in Table 1.	✓	The proposal complies.	
Rural Planning Area				
P2 Lots are of an appropriate size and configuration to sustain the utility and productive capacity of the land for rural purposes, and to reduce potential for impacts on the natural environment by facilitating opportunities for the implementation of improved land management practices and through provision of safe and adequate water supply and sewage disposal.	**A2.1** Lot boundaries relate to natural features such as ridges or other catchment boundaries, drainage lines or flood flows, or remnant stands of vegetation.	✓	The proposal complies. Boundaries of the Lots to the eastern side of the development are contoured to a 10m buffer from the vegetation along Parker Creek.	
	A2.2 Lots comply with the area and dimensions identified for Lots in the Rural Planning Area in Table 1, above.	✓	The proposal complies.	
	A2.3 Designated Development Areas are identified on any lots exceeding a maximum slope of 15% and are registered on title.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Rural Settlement Planning Area				
P3 Rural Settlement lots are located and designed such that they: • have a sustainable level of impact on the natural environment, having regard to water supply and water quality, effluent disposal, potential erosion and natural habitat; • retain significant landscape features, views and vegetation cover; • provide for a high level of residential and scenic amenity, Access to services and facilities, and safety from risk of natural hazards such as bushfire; and • do not impact on the safety and efficiency of the Shire's Road network.	**P3** Rural Settlement lots are located and designed such that they: • have a sustainable level of impact on the natural environment, having regard to water supply and water quality, effluent disposal, potential erosion and natural habitat; • retain significant landscape features, views and vegetation cover; • provide for a high level of residential and scenic amenity, Access to services and facilities, and safety from risk of natural hazards such as bushfire; and • do not impact on the safety and efficiency of the Shire's Road network.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P4 The layout for a residential reconfiguration greater than 10 lots, gives the neighbourhood a positive identity by: • protecting natural features, areas of environmental value and Watercourses; • incorporating Site characteristics, views and landmarks; • providing a legible, connected and safe street, bicycle and pedestrian network that links to existing external networks; • providing community or necessary facilities at convenient focal points; • orientating the street and lots to ensure the siting and design of residential development maximises energy efficiency;	No Acceptable Solution. (Information that the Council may request to demonstrate compliance with the Performance Criteria is outlined in Planning Scheme Policy No 10 – Reports and Information the Council May Request, for code and impact assessable development).	✓	Proposal complies. The proposal: • Protects the natural features, areas of environmental value and Watercourses by providing a 10m buffer from the vegetation, and generous lot sizes; • incorporates Site characteristics, views and landmarks by incorporating a walking track and open space areas along the eastern boundary; • provides a legible, connected and safe street, bicycle and pedestrian network that links to existing external networks of Front Street and the Mossman Township; • provides community facilities (open space, a walking track and parkland) at a convenient focal point in the centre of the proposed development and outer boundary; • orientating the street and lots to ensure the siting and design of residential development maximises energy efficiency.	
P5 Multi-Unit Housing is limited to a small proportion of the total number of lots in a new residential area and is dispersed to ensure conventional residential detached Houses dominate the streetscape.	**A5.1** In new residential areas, not more than 15% of the total number of new lots are nominated on an approved Plan of Reconfiguration for Multi-Unit Housing, with corner lots being preferred.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Commercial/Industrial Planning Areas				
P6 The reconfiguration layout of an industrial/commercial area: • facilitates the efficient use of industrial or commercial land; • ensures minimum impact on the natural environment and on the amenity of adjacent uses; • provides for a variety of lot sizes and complementary uses.	**P6.1** A Concept Plan for the proposed reconfiguration is prepared by a suitably qualified professional and identifies the location of: • natural features, areas of environmental value and Watercourses; • street, bicycle and pedestrian networks and linkages to adjoining areas; • a variety of lot sizes and dimensions, with the minimum areas of dimensions satisfying the requirements of Table 1, above.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Infrastructure for Local Communities				
P7 Provision is made for open space that: • meets the recreational needs of residents and visitors to the Shire; • provides a diverse range of settings; • creates effective linkages with other areas of open space and natural areas; and • contributes to the visual and Scenic Amenity of the Shire.	**A7.1** An area of 10% of the land to be reconfigured is provided as open space in accordance with Planning Scheme Policy No 9 – Open Space Contributions. OR A contribution is paid in lieu of an area being designated for open space in accordance with Planning Scheme Policy No 9 – Open Space Contributions OR A combination of the above, as agreed to by Council.	✓	Proposal complies. The total area of the site required as open space contributions is 3,638m^2. The proposal includes 5,746m^2 as open space contributions and therefore provides an additional contribution of 2,107m^2.	
P8 Informal Parks and Sporting Parks are provided and sited to meet the needs of local residents in the Shire.	**A8.1** Informal Parks are provided at the ratio of 2 hectares per 1000 persons with a minimum size of Informal Parks being 0.5 – 1 hectare (Local Parks) and 3 – 5 hectares (District Parks). AND Sporting Parks are provided at the ratio of 2 hectares per 1000 persons with a minimum size of Sporting Parks being 1.2 – 2 hectares (Local Parks) and 5 hectares (District Parks).	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Road Network				
P9 The Road network: • is integrated and consistent with the existing and proposed local Road network; • is legible and retains existing features, views, topography and vegetation; • is convenient and safe for local residents; • facilitates walking and cycling within the neighbourhood; and • is compatible with the intended role of the State-Controlled Road and does not prejudice traffic safety or efficiency.	**A9.1** Roads are designed and constructed in accordance with the specifications set out in Planning Scheme Policy No 6 – FNQROC Development Manual.	✓	Proposal complies.	
	A9.2 The Road network takes into consideration the natural and cultural features of the Site, existing vegetation, Watercourses and contours.	✓	Proposal complies. The road network is located in the centre of the development to avoid undue risk to the students of Mossman State School on the western boundary and Parker Creek on the eastern boundary.	
	A9.3 The Road network is designed to reduce traffic speeds and volumes on local streets in residential areas to facilitate parking and manoeuvring and to integrate with the existing and proposed pedestrian and bicycle paths network.	✓	Proposal complies. Large lot sizes and compliant road widths with FNQROC facilitates efficient car parking and manoeuvring within the proposed development, linking with Crawford Street.	
	A9.4 Direct Access is not provided to a State-Controlled Road where legal and practical Access from another Road is possible.	✓	Proposal complies.	
	A9.5 Where the created allotments have Frontage to more than one Road, Access to the individual allotments is from the lower order Road.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
P10 The Road network for industrial/commercial reconfigurations ensures convenient movement and Access for vehicles, particularly heavy vehicles, without affecting the amenity of residential neighbourhoods.	**A10.1** Roads are designed and constructed in accordance with the specifications set out in Planning Scheme Policy No 6 – FNQROC Development Manual.	**N/A**	Not applicable.	
	A10.2 Industrial/commercial traffic is able to Access a major Road without intruding into a residential neighbourhood.	**N/A**	Not applicable.	
Pedestrian and Bicycle Network				
P11 Networks of pedestrian and bicycle paths are provided in safe and convenient locations.	**A11.1** Safe and convenient walking and cycling networks are provided to link residential areas to schools, community facilities, parks and public transport, Tourist Attractions, commercial and industrial areas.	✓	Proposal complies. The inclusion of a walking track around the eastern boundary of the proposed development links the residential lots and wider community, encouraging the use of walking and cycling to Mossman State High School and other services. In addition, it encourages the use of the facilities on the subject site including a parkland, playground and BBQ facilities.	
	A11.2 The pedestrian and bicycle path network is constructed in accordance with the specifications set out in Planning Scheme Policy No 6 – FNQROC Development Manual.	✓	Proposal is capable of complying.	
	A11.3 Lighting for bicycle paths is provided in accordance with the relevant Australian Standards.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Stormwater Drainage				
P12 Stormwater runoff is contained and managed so that it does not adversely affect: • natural Watercourses; • surface or underground water quality; or • the built environment either upstream or downstream of the Site.	**A12.1** Stormwater drainage is designed and constructed in accordance with the specifications set out in Planning Scheme Policy No 6 – FNQROC Development Manual.	✓	Proposal complies.	
Water Supply				
P13 An adequate, safe and reliable supply of potable water is provided.	**A13.1** Where in a water supply area, each new lot is connected to Council's reticulated water supply system. AND The extension of and connection to the reticulated water supply system is designed and constructed in accordance with the specifications set out in Planning Scheme Policy No 6 – FNQROC Development Manual.	✓	Proposal complies.	
	A13.2 A contribution is paid in accordance with Planning Scheme Policy No 11 – Water Supply and Sewerage Headworks and Works External Contributions.	✓	Proposal complies.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Treatment and Supply of Effluent				
P14 Provision is made for the treatment and disposal of effluent to ensure that there are no adverse impacts on water quality and no adverse ecological impacts as a result of the system or as a result of increasing the cumulative effect of systems in the locality.	**A14.1** Each new lot is connected to Council's sewerage system. AND The extension of and connection to the sewerage system is designed and constructed in accordance with the specifications set out in Planning Scheme Policy No 6 – FNQROC Development Manual. OR Where the Site is not in a sewerage scheme area, the proposed disposal system meets the requirements of relevant Sections of the Environmental Protection Policy (Water) 1997. AND The proposed on Site effluent disposal system is located on and contained within the lot in accordance with the Standard Sewage Law.	✓	Proposal complies.	
	A14.2 A contribution is paid in accordance with Planning Scheme Policy No 11 – Water Supply and Sewerage Headworks and Works External Contributions	✓	Proposal complies.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Residential Development – Standard Format Plan with Common Property				
P15 Lots have an appropriate area and dimension to protect residential amenity.	**A15.1** The lot configuration under a Standard Format Plan with Common Property satisfies the minimum area and Frontage provisions of the Residential 1 Planning Area Code, as set out in Table 1, below.	**N/A**	Not applicable.	
P16 The Setback of Residential Use from the Access driveways makes efficient use of the Site and provides for the amenity and privacy of residents.	**A16.1** A minimum separation distance of 15 metres is provided between Residential Uses with Frontage to the Access driveway.	**N/A**	Not applicable.	
P17 Internal Access driveways are designed to provide acceptable levels of safety, amenity and convenience for users, in addition to providing for visitor car parking.	**A17.1** Access driveways serving more than 3 lots and a maximum of 20 lots are a minimum of 4 metres in width and provide designated areas for visitor parking at the rate of 1 car space for every 3 Houses/or other Residential Uses.	**N/A**	Not applicable.	
P18 Communal/public open space is provided to service the residents of the development and to contribute to the available public open space in the local community.	**A18.1** The proportion of public open space and communal open space provided by the development is dependant upon the characteristics of the individual development and its proximity to nearby public open space, existing or planned. A split of 6% public open space and 4% communal open space is preferred, but will be determined on a Site/development specific basis.	**N/A**	Not applicable.	
P19 Boundary fencing does not have a significant impact on the visual amenity of the local area.	**A19.1** The side and rear boundary fence is a maximum of 1.8 metres in Height and incorporates decorative panels which incorporate railings, pickets and/or vegetation screening to reduce the bulk and scale of the fence or wall.	**N/A**	Not applicable.	
P20 The installation of Fire Hydrants ensures that they are easy to locate and use in times of emergency and are of a standard consistent with service needs.	**A20.1** Fire Hydrant installation for the development is provided in accordance with the requirements of the relevant Australian Standard.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Boundary Realignment				
P21 The realignment of a boundary or boundaries does not create additional allotments and achieves an improvement on the existing situation.	**A21.1** No additional lots are created. AND The area and configuration of the proposed lots are consistent with the historical pattern of reconfiguration in the local area. AND An improvement on the existing situation is achieved by: • the provision of Access to a lot which previously had no Access; OR • the proposed lots being better suited to the existing or proposed use of the lots, whether or not the provisions relating to minimum area and dimensions are met; OR • the Frontage to depth ratio of the proposed lots being greater than the Frontage to depth ratio of the existing lots.	**N/A**	Not applicable.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Energy Efficiency				
P22 The road and lot layout facilitates the siting and design of buildings to conserve non-renewable energy sources and assists in orientation and design appropriate for the local tropical conditions.	No Acceptable Solution	✓	Proposal complies. The design of the road network within the centre of the proposed development is an efficient design which provides adequate street frontage and minimises compact and clumped lots by providing a linear design approach.	
P23 The road and lot layout minimises fossil fuel use by: reducing the need for and length of local vehicle trips, maximising public transport effectiveness, encouraging walking and cycling, and provision of appropriate street landscaping	No Acceptable Solution	✓	Proposal complies. The linear design of the road network minimises travel distances within the proposed development and links efficiently with Crawford Street. In addition, the close proximity of the proposed development to the Mossman township encourages walking and cycling.	

Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this proposal

Annexure 3

Annexure 4

Mossman Needs Analysis

Research Report

HERRON TODD WHITE

Mossman Residential Land Needs Analysis

Prepared for NV & JS Pty Ltd
As at December 2014
Our Ref CNS124189

Cairns

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List of Tables, Figures and Maps

1 INTRODUCTION

1.1 Instructions

We have been instructed by Claire Simmons, on behalf of NV & JS Pty Ltd, to carry out a needs analysis for residential land in Mossman, with specific reference to a proposed residential land subdivision at 46-62 Front St, Mossman. Topics to be addressed include:

- Population growth analysis and forecasts for Mossman,
- Demand trends for residential land in Mossman, incorporating assessments of overall market size as well as lot sizes and prices,
- Current residential lot supply in Mossman, incorporating assessments of lot sizes, prices, topographies and other characteristics,
- Assessment of future developable lot supply within existing subdivisions,
- Assessment of need for the proposed subdivision, and
- Impact of the consequential loss of community and recreational facilities land.

1.2 Qualifications and Disclaimer

This document is for the use only of **NV & JS Pty Ltd** to whom it is addressed and for no other purpose. No responsibility is extended to any third party who may use or rely on the whole or any part of the content of this report. While the information contained in this report has been carefully compiled from a number of sources, no warranty or promise as to its correctness is made or intended.

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2 MOSSMAN OVERVIEW

Mossman is located in Far North Queensland, approximately 75 kilometres by road north of Cairns and 20 kilometres from Port Douglas. It is the commercial and administrative headquarters to the Douglas Shire, which extends to include Port Douglas and the Daintree Rainforest.

Mossman has direct exposure to the sugar industry, through the Mossman Central Mill having operated in the town since the 1890's and being a major employer.

Tourism has also impacted on Mossman due to its proximity to the Port Douglas tourism hub. The town benefits from exposure to travellers en route to the Daintree as well as the nearby Mossman Gorge. Mossman is undergoing a significant character change from satellite residential activity which has spilled over from Port Douglas.

Front St, Mossman

Mossman is served by a local hospital, State primary and secondary schools, Catholic primary school, Woolworths anchored shopping centre, several pubs and clubs, main shopping strip and some government and banking services.

3 POPULATION

Mossman had a latest official population count within the town area of 1,865 as at 30 June 2013, and a district population, incorporating its nearby localities of Bonnie Doon, Cooya Beach, Finlayvale, Miallo, Mossman Gorge, Newell, Shannonvale and Syndicate, of 3,951 as at the same date. Total Douglas Shire population as at 30 June 2013 stood at 11,503, as shown in Table 1.

Table 1: Mossman District Population

District/Locality	Population as at 30 June				Average Growth (%p.a.)
	2001	2006	2011	2013	
Mossman Town	1,803	1,776	1,779	1,865	0.3%
Mossman Environs	1,865	2,014	2,136	2,086	0.9%
Total Mossman District	3,668	3,790	3,915	3,951	0.6%
Total Douglas Shire	10,264	10,524	11,186	11,503	1.0%

Source: Derived from unpublished ABS data

Mossman's town population has been growing at an average rate of 0.3% per annum over the twelve year period from 2001 to 2013. Population growth within the town has nevertheless been slower than for the Mossman District and Douglas Shire as a whole, which have experienced growth rates of 0.6% and 1.0% per annum respectively.

Population projections to the year 2036 for the Mossman district are given in Table 2. Forward projections have been derived from medium scenario growth forecasts published in 2013 by the Queensland State Government[1]. These projections have been calibrated down to individual districts and localities by Herron Todd White using accepted demographic modelling techniques.

Under the projections, the population of Mossman is forecast to grow from 1,779 in 2011 to 2,072 in 2021 and 2,588 in 2036. This corresponds to a rate of growth averaging 1.5% per annum over the 25 year period. Mossman's forecast population growth rate is similar to that for the Douglas Shire as a whole, where population is expected to increase at an average rate of 1.4% per annum.

Table 2: Population Forecasts for the Mossman District

District/Locality	Estimated Resident Population						Average Growth (% pa)
	2011 Actual	2016 Forecast	2021 Forecast	2026 Forecast	2031 Forecast	2036 Forecast	
Mossman Town	1,779	1,913	2,072	2,238	2,411	2,588	1.5%
Mossman Environs	2,136	2,356	2,616	2,887	3,170	3,461	1.9%
Total Mossman District	3,915	4,269	4,688	5,125	5,581	6,049	1.8%
Total Douglas Shire	11,186	11,970	12,873	13,797	14,749	15,717	1.4%

Source: ABS, QGSO, HTW Research

[1] Queensland Government Statistician's Office, *Queensland Government population projections to 2036, 2013 edition: LGAs and SA2s,* together with associated data tables accessed from http://www.qgso.qld.gov.au.

4 DEMAND FOR RESIDENTIAL LAND

Demand for residential land, as indicated by sales of vacant land for residential use taking place inside the Mossman town area, is shown in Table 3. It covers all sales of vacant residential allotments of up to 2,400 square metres in size, which have taken place in normal arms length transactions within the town. It thus specifically excludes non-residential and non-market transactions such as industrial or commercial land sales, part-property transactions and intra-family sales. Table 3 also distinguishes developer sales of allotments in new residential subdivisions from re-sales of previously purchased allotments.

The table indicates that cumulatively over the period since 1990-91, there have been 324 vacant residential allotment sales which have taken place in Mossman in normal arms length transactions. New developer sales have accounted for 238 of these transactions, equating to 73% of total land sale volumes.

Table 3: Vacant Residential Land Sales in Mossman

Year	Developer Sales	Resales	Total Sales
1990-91	5	2	7
1991-92	19	1	20
1992-93	18	3	21
1993-94	12	7	19
1994-95	4	5	9
1995-96	-	1	1
1996-97	-	2	2
1997-98	11	2	13
1998-99	-	-	-
1999-00	3	1	4
2000-01	2	-	2
2001-02	5	-	5
2002-03	3	3	6
2003-04	11	7	18
2004-05	31	5	36
2005-06	40	4	44
2006-07	24	8	32
2007-08	23	13	36
2008-09	4	4	8
2009-10	4	2	6
2010-11	2	6	8
2011-12	7	3	10
2012-13	5	2	7
2013-14	3	4	7
2014-15 (to date)	2	1	3
Total	238	86	324

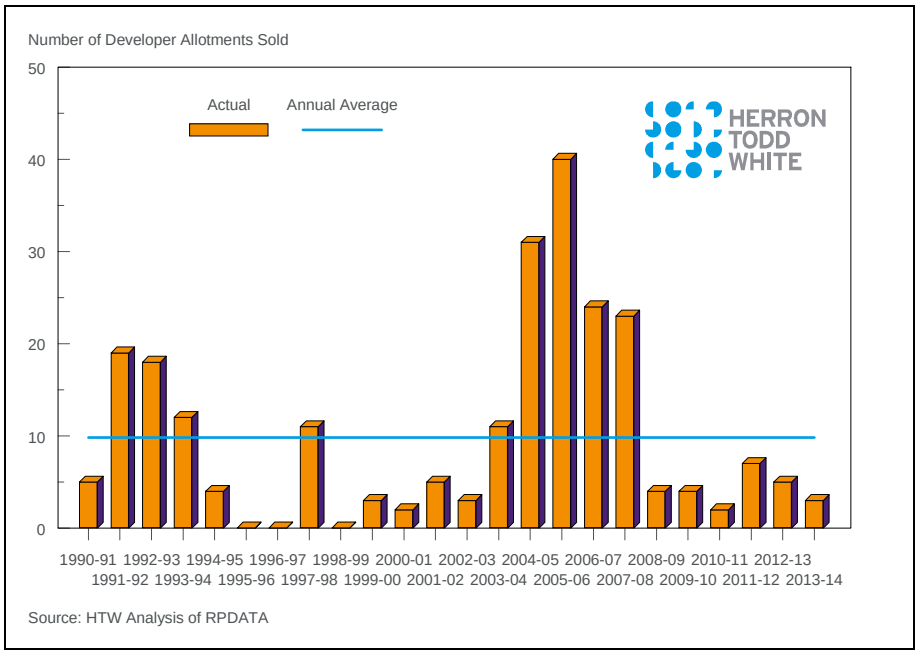
Source: HTW Analysis of RPData

Also evident from Table 3 is that there is significant variation in the annual demand rate for residential land, with sale numbers each year ranging from zero through to 44 over the period from 1990-91 to 2013-14. The inherent variation is further encapsulated in Figure 1, which charts numbers of land sales per annum specifically for developer sales only.

The chart indicates a high degree of cyclicality, with distinct market peaks in the early 1990s and the mid 2000s. Overall across the period from 1990-91 to 2013-14 there has been an average of 10 developer lot sales per annum, which is indicative of the overall long term average demand for new residential allotments inside Mossman. Nevertheless land sales have been and will continue to be subject to a high degree of cyclicality and significant variation in individual years. Land demand has been generally low over the past six

years, but current property market conditions are suggestive of forthcoming consolidation and recovery. If realised, land demand could be expected to increase to average to above average levels as part of a local property upswing over the immediate future.

Figure 1: New Residential Land Sales in Mossman



The disposition of residential land in Mossman sold by developers since 1990-91, according to lot size, is given in Table 4, and is charted in aggregate in Figure 2. This shows that by far the majority of residential lots sold have been in the 800 to 900 square metre size range, followed by lots in the 700 to 800 square metre size category. However Table 4 reveals that of the lots sold from 2008-09 on, all except two have been in the 800 to 900 square metre size category.

Figure 2: New Residential Land Sales in Mossman, by Lot Size

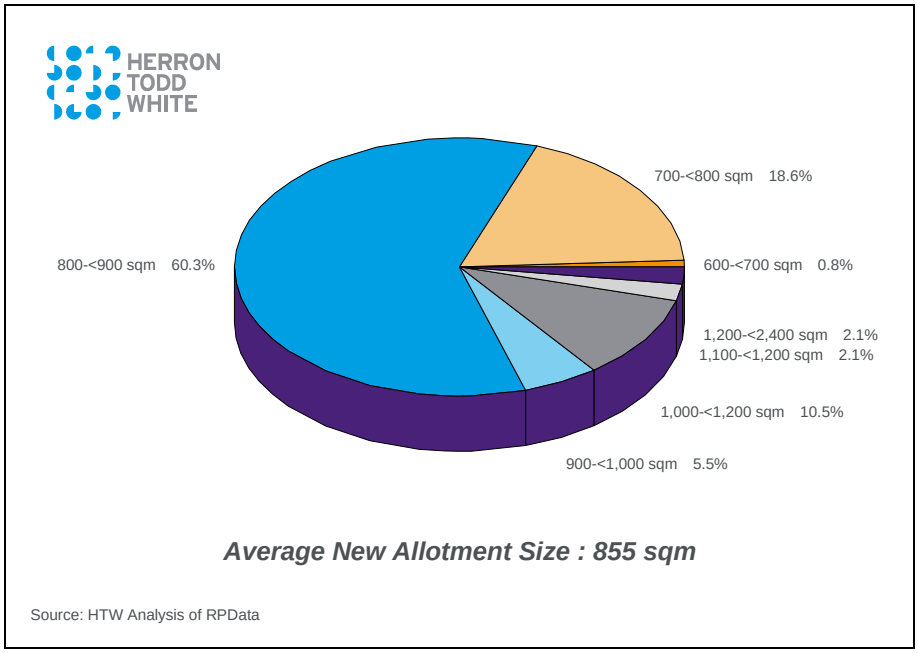


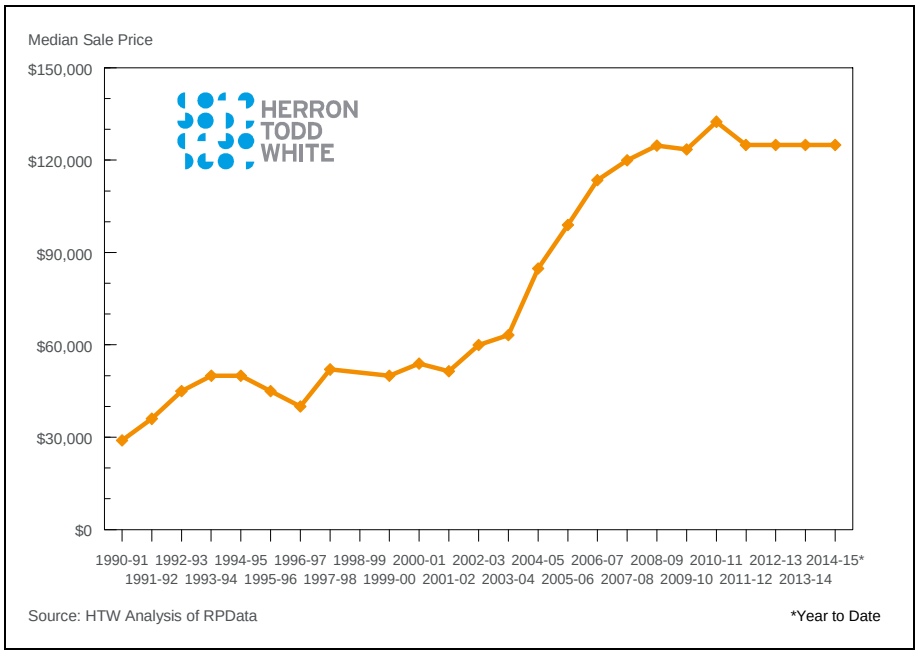
Table 4: New Residential Land Sales in Mossman, by Lot Size

Year	600-<700	700-<800	800-<900	900-<1,000	1,000-<1,100	1,100-<1,200	1,200-<2,400	Total	Average Size
1990-91	-	-	4	-	1		-	5	889
1991-92	-	-	11	3	4		1	19	945
1992-93	-	-	8	2	7		1	18	938
1993-94	-	1	7	1	3		-	12	876
1994-95	-	2	2	-	-		-	4	798
1995-96	-	-	-	-	-		-	-	-
1996-97	-	-	-	-	-		-	-	-
1997-98	-	9	2	-	-		-	11	746
1998-99	-	-	-	-	-		-	-	-
1999-00	-	3	-	-	-		-	3	755
2000-01	-	2	-	-	-		-	2	705
2001-02	-	5	-	-	-		-	5	734
2002-03	-	3	-	-	-		-	3	709
2003-04	2	8	-	-	1		-	11	751
2004-05	-	3	17	2	8		1	31	906
2005-06	-	8	26	2	4		-	40	835
2006-07	-	-	22	1	-		1	24	832
2007-08	-	-	20	2	-		1	23	856
2008-09	-	-	4	-	-		-	4	827
2009-10	-	-	2	-	2		-	4	940
2010-11	-	-	2	-	-		-	2	883
2011-12	-	-	7	-	-		-	7	861
2012-13	-	-	5	-	-		-	5	863
2013-14	-	-	3	-	-		-	3	848
2014-15 (to date)	-	-	2	-	-		-	2	827
Total	2	44	144	13	25	5	5	238	855

Source: HTW Analysis of RPData

Figure 3 tracks the median price movements for vacant residential land in Mossman. This chart incorporates prices of second and subsequent sales of previously purchased allotments (i.e. re-sales) as well as sales of developer stock. Figure 3 shows that the median vacant residential allotment price built from $29,000 in 1990-91 to reach $132,500 in 2010-11, but has constantly remained at $125,000 each year past 2010-11.

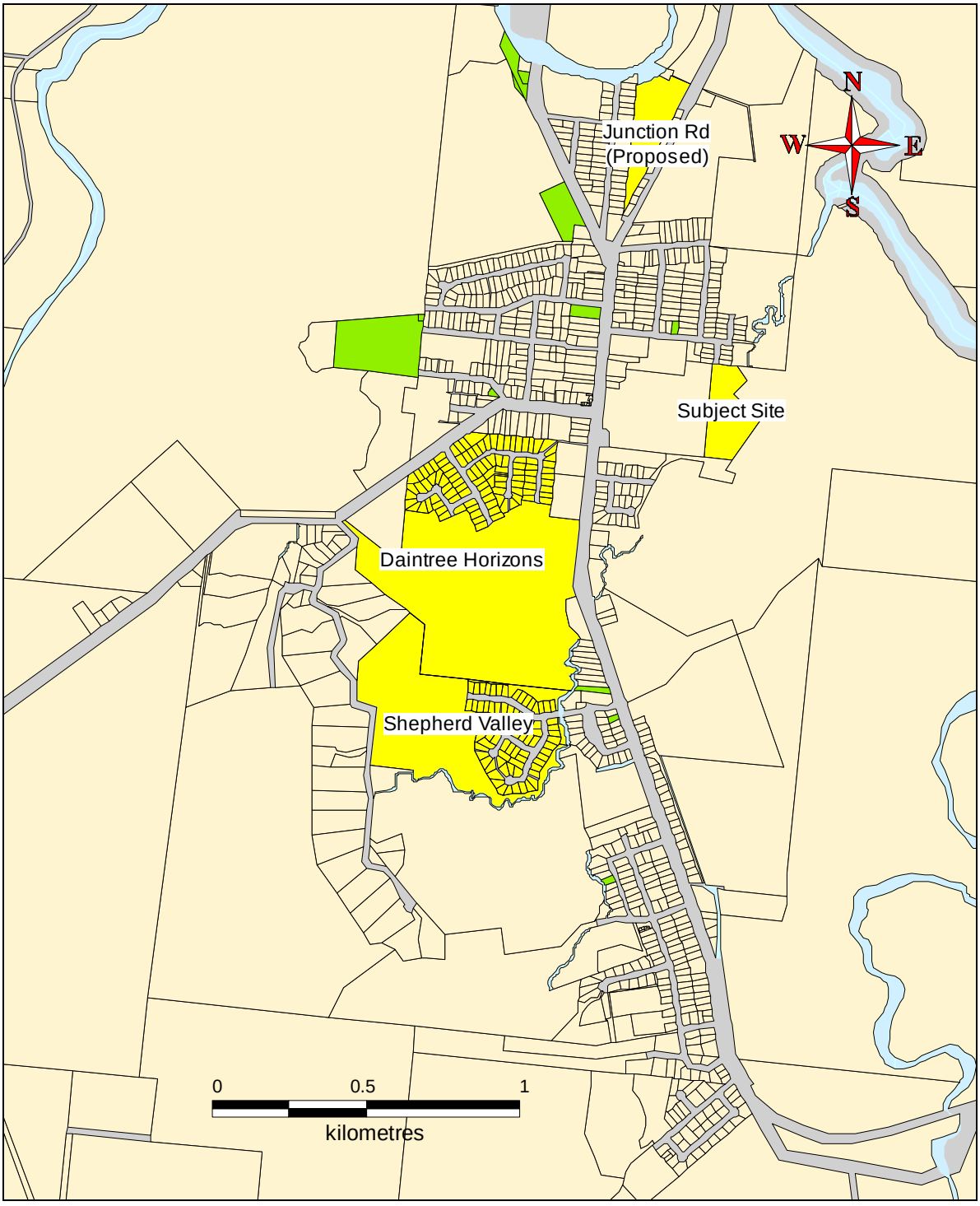
Figure 3: Median Residential Land Prices in Mossman



5 EXISTING LAND SUPPLY

These are existing two residential land estates in progress in Mossman, these being Daintree Horizons and Shepherd Valley. In addition, there is one further proposed subdivision in the vicinity of Junction Road, which is the subject of a development application currently before Council. The locations of these estates relative to the subject site of the proposed subdivision are depicted in Map 1.

Map 1: Existing Residential Subdivisions in Mossman



Source: Queensland DCDB & HTW Research

5.1 Shepherd Valley

Shepherd Valley is presently taking place on 23.8 hectares of former cane land that is being progressively developed with 182 residential lots. There have been 77 lots constructed to date, consisting of 33 lots comprising Stage 1 which came on line in 1997, followed by a further 44 lots comprising Stages 2 and 3 in 2005. The last of the lots constructed in Stages 1 to 3 sold in 2007, and the vast majority of these lots have now been built on. Lot construction in the estate has been inactive since 2005 and there have been no developer lots available for purchase in the estate since 2007. Lots developed in Stages 1 to 3 have ranged from 669 to 1,267 square metres in size, and have an average size of 787 square metres. All lots are basically level and provide an easy building contour.

Table 5: Lot Disposition, Shepherd Valley

Stage	Stages 1-3	Stage 4	Stage 5
Status	Constructed	Proposed	Proposed
Number of Lots by Lot Size (sqm):			
600-<700	2	-	-
700-<800	41	1	-
800-<900	27	40	28
900-<1,000	3	2	4
1,000-<1,100	2	3	5
1,100-<1,200	1	-	3
1,200-<1,300	1	2	3
1,300-<1,400	-	-	5
1,400-<1,500	-	1	1
1,500-<1,600	-	-	1
1,600-<1,700	-	-	2
1,700-<1,800	-	-	1
1,800-<1,900	-	-	2
1,900-<2,000	-	-	1
2,000+	-	-	-
Total Lots	77	49	56
Minimum Lot Size	669	756	800
Maximum Lot Size	1,267	1,452	1,937
Average Lot Size	787	857	1,067
Median Lot Size	781	801	907
Number of Lots 1,000 sqm or more	4	6	24
Percent of Lots 1,000 sqm or more	5.2%	12.2%	42.9%

Source: HTW Research

The next stages proposed for development are Stages 4 and 5, consisting of a further 49 and 56 residential lots respectively. Lots in Stage 4 range from 756 to 1,452 square metres in size, with an average of 857 square metres. These lots are mostly gently sloping but will provide relatively easy building contours. Stage 5 will have lots ranging from 800 to 1,937 square metres, and an average of 1,067 square metres. Most of the lots in Stage 5, and in particular all of the lots in this stage over 1,000 square metres in size, are steeply sloping and will require significant excavation to create building pads. Timing for the development of Stage 4 is not yet known, and Stage 5, which is expected to follow once Stage 4 is completed, could thus be some time away.

Table 5 summarises the current and proposed lot dispositions in the Shepherd Valley estate. Notable is that lots over 1,000 square metres have comprised a minor proportion of the lots constructed to date. However there have been two instances of lots being subsequently purchased (as a re-sale from their original purchasers) by owners of adjoining lots, to create two larger amalgamated lots in the estate of 1,601 and

1,763 square metres respectively. In addition there is a further instance of one originally purchased lot being extended from 800 to 1,043 square metres through the owner purchasing additional adjoining land.
Stage 5 of the estate will provide 24 lots over 1,000 square metres in size, but as also noted, these will be typically steeply sloping and could be some time away.

5.2 Daintree Horizons

Daintree Horizons is taking place on 41.9 hectares of former cane land to the immediate north of Shepherd Valley. Thus far in the estate 102 lots have been developed across two stages, with Stage 1 of 44 lots coming onto the market in June 2005, and Stage 2 of 58 lots coming on in January 2007. The last of these lots sold in September 2014, and there are no developer lots currently available for purchase in the estate. Approximately 75% to 80% of the lots sold to date have now been built on. All lots are basically level and provide an easy building contour.

Table 6: Lot Disposition, Daintree Horizons

Stage	Stage 1	Stage 2
Status	Constructed	Constructed
Number of Lots by Lot Size (sqm):		
600-<700	-	-
700-<800	-	-
800-<900	31	54
900-<1,000	2	2
1,000-<1,100	7	2
1,100-<1,200	2	-
1,200-<1,300	1	-
1,300-<1,400	-	-
1,400-<1,500	-	-
1,500-<1,600	-	-
1,600-<1,700	-	-
1,700-<1,800	-	-
1,800-<1,900	-	-
1,900-<2,000	-	-
2,000+	1	-
Total Lots	44	58
Minimum Lot Size	800	800
Maximum Lot Size	2,029	1,075
Average Lot Size	899	847
Median Lot Size	809	840
Number of Lots 1,000 sqm or more	11	2
Percent of Lots 1,000 sqm or more	25.0%	3.4%

Source: HTW Research

Table 6 provides a breakdown of the lot dispositions for the lots developed to date. Notable is that the most recent stage has provided just 2 lots in excess of 1,000 square metres in size. There have been two instances of lots being subsequently purchased (as a re-sale from their original purchasers) by owners of adjoining lots, to create two larger amalgamated lots in the estate of 1,600 and 2,144 square metres respectively.

Daintree Horizons has capacity for a further 280 to 300 lots to be constructed, but there is no current development activity in progress. It is understood that a development application is being prepared for two new stages with approximately 10 lots in each – significantly smaller than the preceding stages – but the timing and lot dispositions of these stages are not yet known. However it is expected that the new stages will continue to target the 800 to 900 square metres lot size category.

5.3 Junction Road Subdivision

This is a proposed 33-lot subdivision on a 39.14 hectare site located between Junction Road and the Mossman River north of the Mossman town centre, for which a development application was lodged in November 2013. Once approved, the subdivision is proposed to be constructed in three stages, of 13, 11 and 9 lots respectively. However the timing of the subdivision and its various stages is not yet known. In addition, the site once developed is expected to suffer some consumer resistance, due to its location 'downwind from the Mill'.

Table 7: Lot Disposition, Proposed Junction Road Subdivision

Stage	Stage 1	Stage 2	Stage 3
Status	Proposed	Proposed	Proposed
Number of Lots by Lot Size (sqm):			
600-<700	-	-	-
700-<800	-	-	-
800-<900	11	9	7
900-<1,000	1	-	-
1,000-<1,100	-	1	-
1,100-<1,200	1	-	1
1,200-<1,300	-	1	-
1,300-<1,400	-	-	-
1,400-<1,500	-	-	-
1,500-<1,600	-	-	-
1,600-<1,700	-	-	-
1,700-<1,800	-	-	-
1,800-<1,900	-	-	-
1,900-<2,000	-	-	-
2,000+	-	-	1
Total Lots	13	11	9
Minimum Lot Size	800	800	800
Maximum Lot Size	1,147	1,214	2,842
Average Lot Size	854	867	1,066
Median Lot Size	802	800	800
Number of Lots 1,000 sqm or more	1	2	2
Percent of Lots 1,000 sqm or more	7.7%	18.2%	22.2%

Source: HTW Research

Table 7 provides lot dispositions for the proposed subdivision. Lots proposed in Stage 1 range from 800 to 1,147 square metres in size, and have an average size of 854 square metres, while lots proposed in Stage 2 range from 800 to 1,214 square metres in size, and have an average size of 867 square metres. Lots proposed in Stage 3 range from 800 to 2,842 square metres in size, and have an average size of 1,066 square metres. All lots proposed are basically level and will provide an easy building contour. Altogether 5 lots are proposed of 1,000 square metres or more in size.

5.4 Subject Subdivision

Table 8 provides lot dispositions for the proposed subject subdivision, consistent with the Subdivision Plan provided at Annexure 1. The proposed subdivision will take place on a 3.638 hectare site located on Mossman's eastern side, on an extension of Crawford Street, between land occupied by the Mossman High School and Parker Creek. The subdivision will provide 19 residential lots, all of which will be 1,000 square metres or more in size, and will range up to 1,835 square metres in size. Average lot size will be 1,239 square metres. All lots will be relatively level and will provide an easy building contour.

Table 8: Lot Disposition, Subject Subdivision

Stage	Entire Estate
Status	Proposed
Number of Lots by Lot Size (sqm):	
600-<700	-
700-<800	-
800-<900	-
900-<1,000	-
1,000-<1,100	10
1,100-<1,200	-
1,200-<1,300	-
1,300-<1,400	4
1,400-<1,500	1
1,500-<1,600	2
1,600-<1,700	1
1,700-<1,800	-
1,800-<1,900	1
1,900-<2,000	-
2,000+	-
Total Lots	19
Minimum Lot Size	1,000
Maximum Lot Size	1,835
Average Lot Size	1,239
Median Lot Size	1,131
Number of Lots 1,000 sqm or more	19
Percent of Lots 1,000 sqm or more	100.0%

Source: HTW Research

6 ASSESSMENT OF NEED

Information presented in this report indicates that:

- There is an average long term demand for approximately 10 new residential lots to be constructed in Mossman each year, though with significant variation in individual years. Residential land demand in the immediate future is likely to increase to average to above average levels as part of an expected local property upswing.
- Residential lots developed to date within Mossman's two existing land estates are completely 'sold out', resulting in there being no new residential lots currently available for purchase within the Mossman town area.
- No lot construction activity is currently taking place. Nevertheless there is a significant bank of future developable supply within the two existing estates and one further proposed subdivision.
- The existing estates have primarily targeted lots in the 800 to 900 square metre size range, as will the proposed Junction Road subdivision, with limited offerings of lots in excess of 1,000 square metres
- The subject subdivision will provide all lots sized at 1,000 square metres or more. These lots will all be level and provide easy building contours.
- Stage 5 of Shepherd Valley estate will provide a number of future lots in excess of 1,000 square metres. Most of these lots will steeply sloping, thus being different in character and likely to appeal to different buyers to the level lots that will be available in the subject subdivision. In addition, it could be some time before Stage 5 of Shepherd Valley estate becomes developed.
- The subject subdivision will assist in providing diversity and choice in the market.

These factors indicate a justifiable market need for the proposed subdivision.

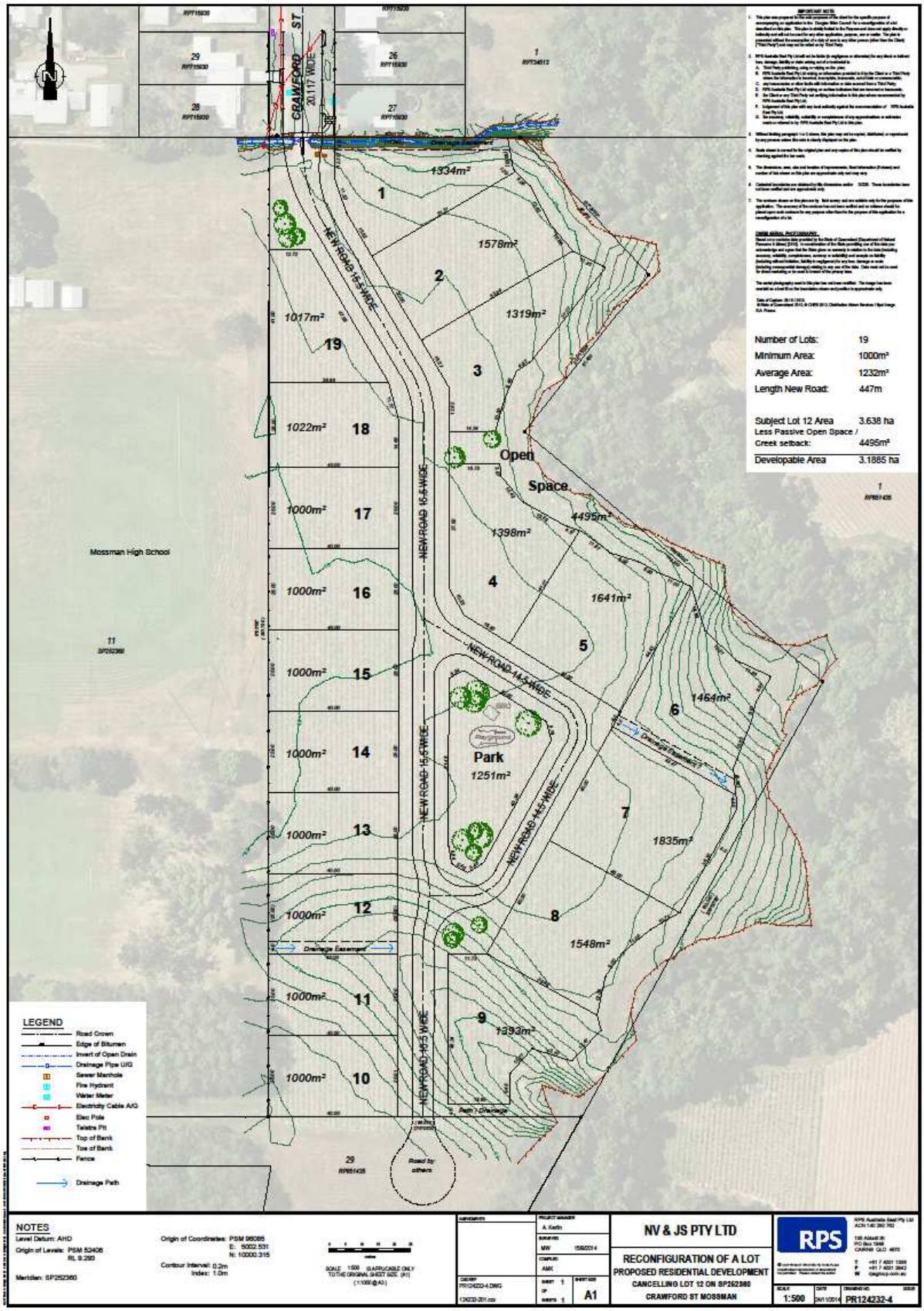
7 IMPACT ON COMMUNITY AND RECREATIONAL FACILITIES LAND

The site of the subject subdivision is presently designated as 'community and recreational facilities', consistent with prior State ownership attached to the Mossman State High School.

However it is noted that the site is presently given over to sugar cane cultivation, thus restricting community and recreational use over most of the site.

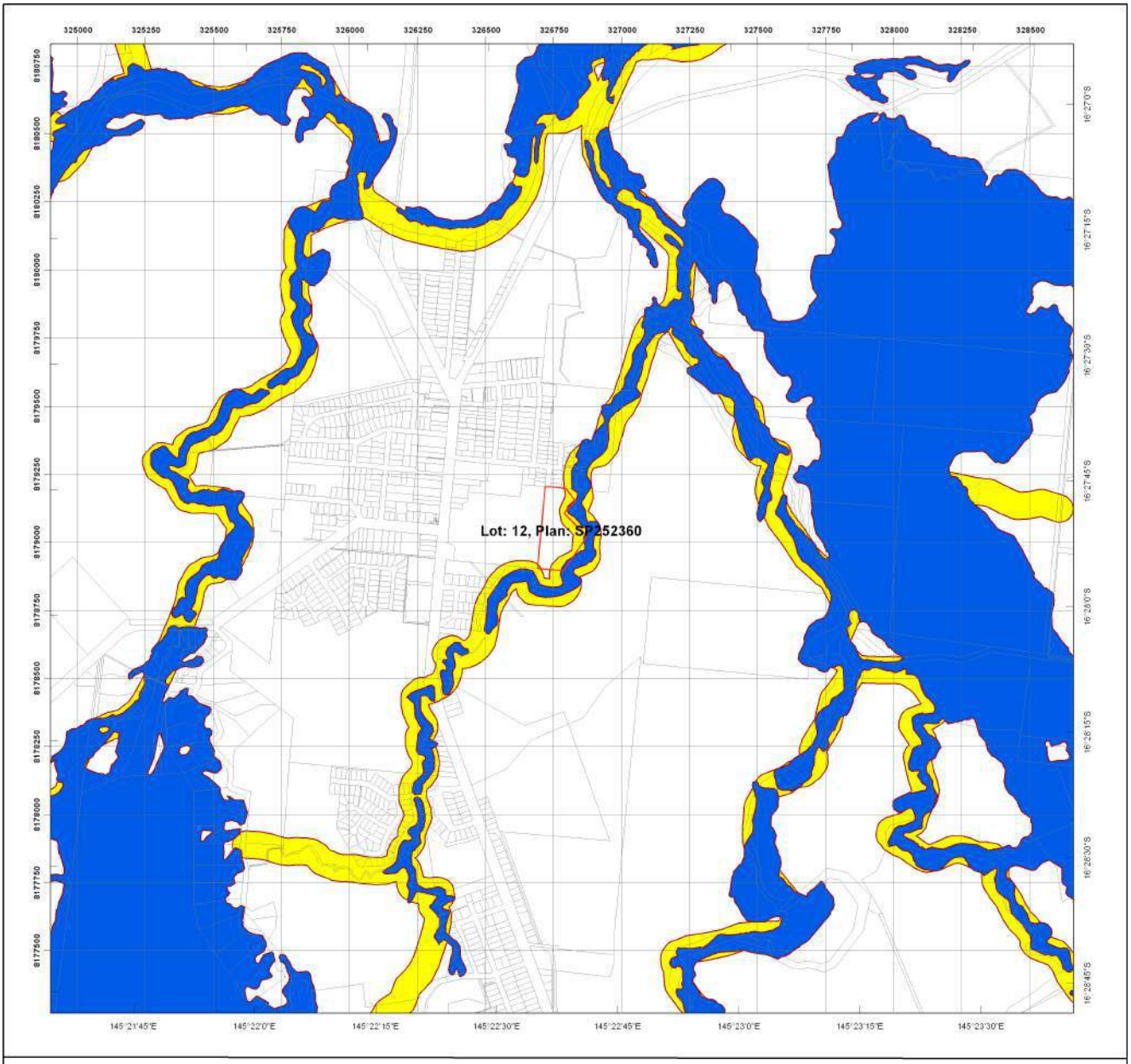
Once developed, the subject subdivision will retain significant open space along the Parker Creek corridor, and will retain public walking/recreational access to this space. In addition, the subdivision will provide a 1,251 square metre internal park area developed with a playground and BBQ facilities.

Retention of public access to the Parker Creek corridor, together with the addition of a park, will provide a net increase in community recreational opportunity relative to the site's existing use as cane land.


CRAWFORD ST
20.117 WIDE
NEW ROAD 15.5 WIDE
NEW ROAD 16.6 WIDE
NEW ROAD 14.5 WIDE
Open Space
4495m²
Park
1251m²
Mossman High School
Number of Lots: 19
Minimum Area: 1000m²
Average Area: 1232m²
Length New Road: 447m
Subject Lot 12 Area 3.638 ha
Less Passive Open Space / Creek setback: 4495m²
Developable Area 3.1885 ha
LEGEND
NOTES
NV & JS PTY LTD
RECONFIGURATION OF A LOT
PROPOSED RESIDENTIAL DEVELOPMENT
CANCELLING LOT 12 ON SP252360
CRAWFORD ST MOSSMAN
RPS
1:500
PR124232-4

Annexure 5

Regulated Vegetation and Vegetation Management Map



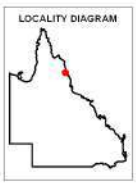
Regulated Vegetation Management Map

Legend

- Lot and Plan
- Category A area (Vegetation offsets/compliance notices/VDecs)
- Category B area (Remnant vegetation)
- Category C area (High-value regrowth vegetation)
- Category R area (Reef regrowth watercourse vegetation)
- Category X area (Vegetation not regulated under the VMA)
- Water
- Area not categorised
- Cadastral line
  Property boundaries shown are provided as a locational aid only

Queensland Government

LOCALITY DIAGRAM



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Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.dnrm.qld.gov.au or contact the Department of Natural Resources and Mines.

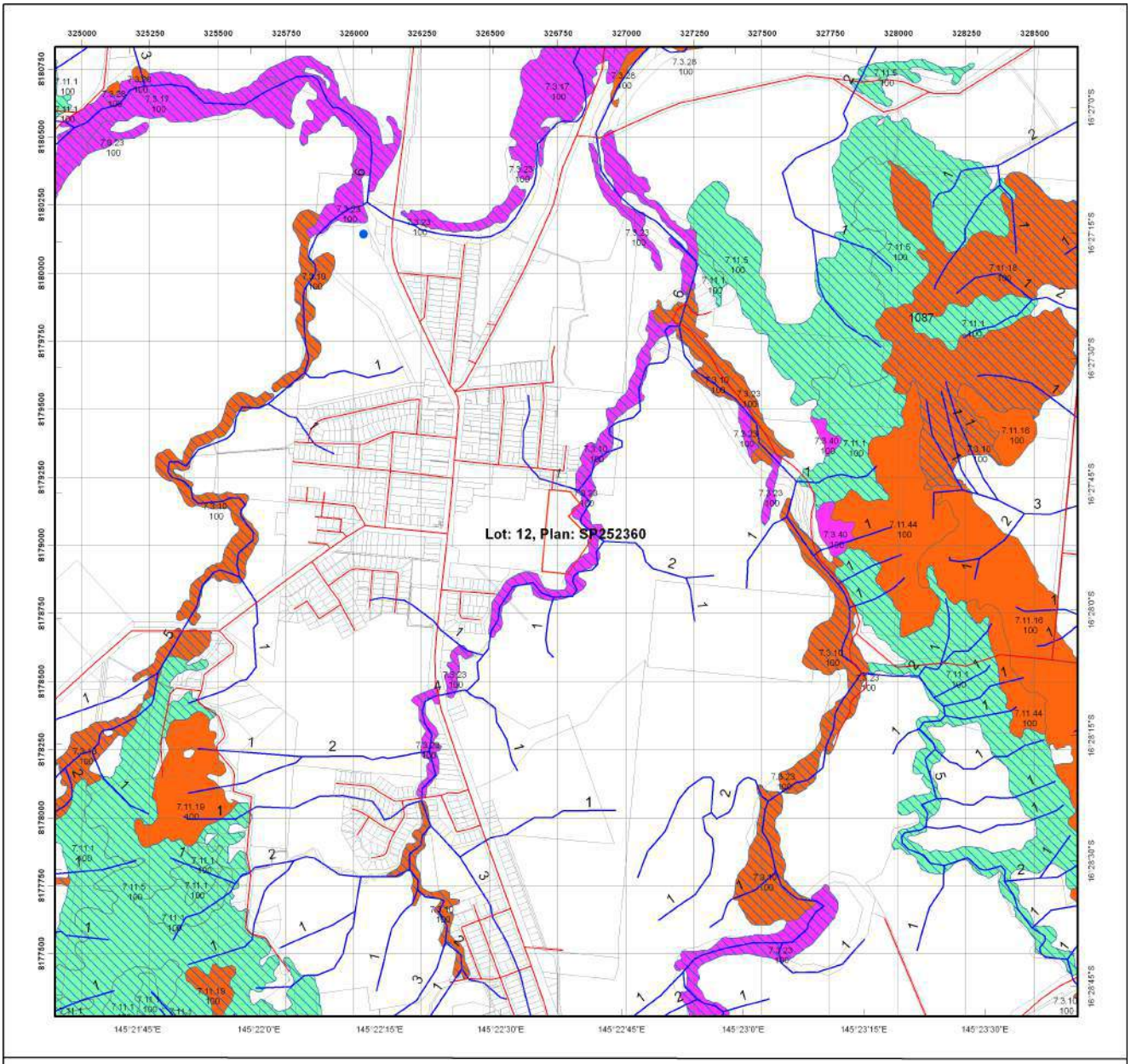
Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at http://www.information.qld.gov.au/

This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.

N

0 200 400 600 800 1,000 m

This product is projected into:
GDA 1994 MGA Zone 55



Vegetation Management Supporting Map

Legend

- Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category A or B area containing remnant vegetation
- Category A or B area under Section 20AH
  These areas are edged in yellow and filled with the remnant RE Status
- Category C area containing endangered regional ecosystems
- Category C area containing of concern regional ecosystems
- Category C area that is a least concern regional ecosystem
- Category C area containing high value regrowth vegetation
- Category C area under Section 20AI
  These areas are edged in purple and filled with the remnant RE Status
- Non Remnant
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourse on the vegetation management watercourse map
  (Stream order shown as black number against stream where available)
- Roads
  © Pitney Bowes Software Pty Ltd
- National Parks, State Forest and other reserves
- Cadastral line
  Property boundaries shown are provided as a locational aid only

LOCALITY DIAGRAM

N

0 150 300 450 600 750 m

This product is projected into:
GDA 1994 MGA Zone 55

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

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Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.dnrm.qld.gov.au or contact the Department of Natural Resources and Mines.

Digital data for the vegetation management watercourse map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at http://www.information.qld.gov.au/

Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

- State Development Assessment Provisions - Module 8: Native vegetation clearing which sets out the matters of interest to the state for development assessment under the *Sustainable Planning Act 2009*; and
- Self-assessable vegetation clearing codes made under the *Vegetation Management Act 1999*

Essential habitat for one or more of the following species is found on and within 1.1 km of the identified subject lot/s or on and within 2.2 km of an identified coordinate on the accompanying essential habitat map.

This report identifies essential habitat in Category A, B and Category C areas.

The numeric labels on the essential habitat map can be cross referenced with the database below to determine which essential habitat factors might exist for a particular species.

Essential habitat is compiled from a combination of species habitat models and buffered species records.

The Department of Natural Resources and Mines website (http://www.dnrm.qld.gov.au) has more information on how the layer is applied under the State Development Assessment Provisions - Module 8: Native vegetation clearing and the *Vegetation Management Act 1999*.

Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated.

Essential habitat, for protected wildlife, means a category A area, a category B area or category C area shown on the regulated vegetation management map-

1) (a) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or
2) (b) in which the protected wildlife, at any stage of its life cycle, is located.

Essential habitat identifies endangered or vulnerable native wildlife prescribed under the *Nature Conservation Act 1994*.

Essential habitat in Category A and B (Remnant vegetation species record) areas:1100m Species Information

(no results)

Essential habitat in Category A and B (Remnant vegetation species record) areas:1100m Regional Ecosystems Information

(no results)

Essential habitat in Category A and B (Remnant vegetation) areas:1100m Species Information

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
1087	Casuarius casuarius johnsonii (southern population)	Southern Cassowary (southern population)	E	Dense lowland and highland tropical rainforest, closed gallery forest, eucalypt forest with vine forest elements, swamp forest and adjacent melaleuca swamps, littoral scrub, eucalypt woodland and mangroves; often using a habitat mosaic; will cross open eucalypt, canefields and dry ridges between rainforest patches.	Sea level to 1500m.	no soil information	None

Essential habitat in Category A and B (Remnant vegetation) areas:1100m Regional Ecosystems Information

Label	Regional Ecosystem (this is a mandatory essential habitat factor, unless otherwise stated)
1087	7.1.3, 7.2.1, 7.2.3, 7.2.4, 7.2.5, 7.2.6, 7.2.11, 7.3.1, 7.3.3, 7.3.4, 7.3.5, 7.3.6, 7.3.7, 7.3.8, 7.3.10, 7.3.12, 7.3.17, 7.3.23, 7.3.25, 7.3.36, 7.3.37, 7.3.38, 7.8.1, 7.8.2, 7.8.3, 7.8.4, 7.8.7, 7.8.8, 7.8.14, 7.11.1, 7.11.2, 7.11.5, 7.11.6, 7.11.7, 7.11.10, 7.11.12, 7.11.13, 7.11.14, 7.11.18, 7.11.23, 7.11.24, 7.11.25, 7.11.28, 7.11.29, 7.11.30, 7.11.34, 7.12.1, 7.12.2, 7.12.4, 7.12.5, 7.12.7, 7.12.9, 7.12.13, 7.12.16, 7.12.17, 7.12.19, 7.12.20, 7.12.39, 7.12.40, 7.12.44, 7.12.47, 7.12.50, 7.12.68. Also includes secondary habitat within identified priority corridors, and secondary habitat surrounded by primary habitat. Secondary regional ecosystems are 7.1.1, 7.1.2, 7.1.4, 7.1.5, 7.2.2, 7.2.7, 7.2.8, 7.2.9, 7.2.10, 7.3.2, 7.3.9, 7.3.13, 7.3.14, 7.3.16, 7.3.19, 7.3.20, 7.3.21, 7.3.26, 7.3.28, 7.3.29, 7.3.30, 7.3.31, 7.3.34, 7.3.35, 7.3.39, 7.3.40, 7.3.43, 7.3.45, 7.3.46, 7.3.47, 7.3.49, 7.8.11, 7.8.12, 7.8.13, 7.8.15, 7.8.16, 7.11.16, 7.11.19, 7.11.21, 7.11.26, 7.11.27, 7.11.31, 7.11.32, 7.11.36, 7.11.39, 7.11.40, 7.11.42, 7.11.43, 7.11.44, 7.11.46, 7.11.49, 7.12.10, 7.12.11, 7.12.12, 7.12.21, 7.12.22, 7.12.32, 7.12.24, 7.12.25, 7.12.26, 7.12.27, 7.12.28, 7.12.29, 7.12.30, 7.12.34, 7.12.35, 7.12.37, 7.12.41, 7.12.45, 7.12.48, 7.12.49, 7.12.53, 7.12.59, 7.12.60, 7.12.61, 7.12.62, 7.12.67

Essential habitat in Category C (High value regrowth vegetation) areas:1100m Species Information

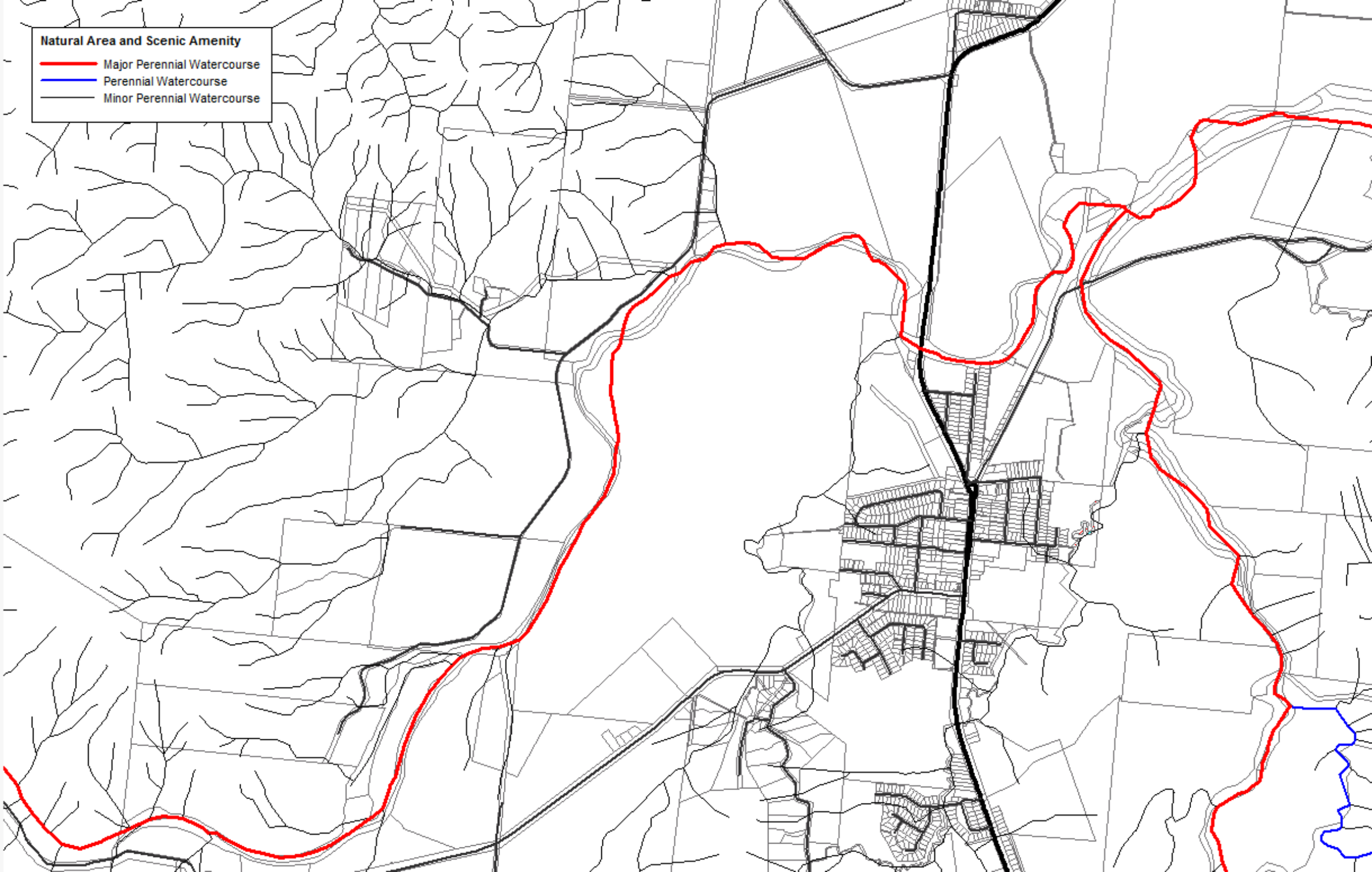
(no results)

Essential habitat in Category C (High value regrowth vegetation) areas:1100m Regional Ecosystems Information

(no results)

Annexure 6

Perennial Watercourse Mapping


Natural Area and Scenic Amenity
Major Perennial Watercourse
Perennial Watercourse
Minor Perennial Watercourse

Annexure 7

Preliminary Engineering Report

Genesis Engineering (NQ) Pty Ltd
"Creating the Future"
ABN 85 162 129 795

Craig Waters
Consulting Engineer / Project Manager

Preliminary report

on

water, sewer and stormwater infrastructure for proposed 19 Lot subdivision at Lot 12, SP252360, 46 to 62 Front Street, Mossman

Prepared for
NV & JS Pty Ltd

Reference: 140923 - Concept Infrastructure Report RPT - Rev C

Date: 6 January 2015

Genesis Engineering (NQ) Pty Ltd

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Document Status

Revision	Author	Reason for Issue	Date	Approved	RPEQ No.
A	C. Waters	Draft for Comment	5th December 2014	-	7419
B	C. Waters	For DA	17th December 2014	C. Waters	7419
C	C. Waters	Revised for DA	6th January 2015	C. Waters	7419

Submitted to:
Nathan Verri, Managing Director
NV & JS Pty Ltd
Email: info@nathanverri.com

CC to:
Claire Simmons
Planning Plus Qld
Email: claire@planningplusqld.com.au

Executive Summary

In October 2014, Planning Plus (Town Planning and Project Management & Development Consultants), on behalf of NV & JS Pty Ltd (the Developer) commissioned Genesis Engineering (NQ) Pty Ltd (Genesis Engineering) to undertake a basic Pre DA assessment of water, sewerage and stormwater infrastructure for a proposed 19 Lot residential subdivision at Front Street, Mossman.

This report summarises the preliminary assessments. It also includes a sketch of the proposed water, sewerage and stormwater drainage infrastructure, as well as proposed Lot filling levels. This assessment is based on very preliminary information. Information provided in this report will need to be verified and validated during the design phase.

General

The site has a ridge of approx. 8m to 9m AHD on the proposed road alignment. This seems a logical and practical place to locate the road.

Existing Crawford Street is around RL 8.5m. The proposed road should join well with the existing Crawford St infrastructure.

The site has a natural central high point which falls to the north, west and south. This appears good for storm water drainage.

The drainage easements seem to be well placed to drain the site and to convey storm water.

Survey shows an existing Electrical supply and Telstra in Crawford St.

Water supply infrastructure

The preliminary water reticulation layout shows a 100mm diameter water supply ring main in the road reserves, with 50mm diameter loop line in the main road to provide reticulation as required in FNQROC Development Manual.

Council could not comment on the ability of the existing Council water supply infrastructure to provide adequate water Pressure and Flow to the proposed development. The Developer will need to arrange for Pressure and Flow testing to verify whether or not Council's existing water supply infrastructure is adequate to supply the proposed development.

Sewerage Infrastructure

The preliminary Sewerage reticulation layout discharges to an existing sewerage manhole at the end of Crawford Street.

Some of the Lots are lower than the sewerage manhole. A Sewerage Pump Station (SPS) has been shown on Lot 5. This SPS receives gravity sewerage from Lots 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 15.

The SPS has a Sewerage Rising Main (SRM) which conveys sewerage pumped from the SPS to the existing sewerage manhole at the end of Crawford Street.

Lots 1, 2, 3, 16, 17, 18 and 19 have separate 150mm diameter gravity sewerage mains discharging into the existing sewerage manhole at the end of Crawford Street.

Lots 1, 2, 3, 4, 5, 6, and 9 are shown with design fill levels to obtain a more efficient gravity sewerage system.

Council was not able to confirm whether the current Council sewerage infrastructure is adequate to receive the sewage generated by the proposed development.

The Developer will need to provide Council with the various design sewerage flow rates, and then Council would be able to comment on the adequacy of existing Council sewerage infrastructure.

Stormwater Drainage

The preliminary stormwater drainage layout discharges in several locations to the adjoining Parker Creek which is east of the development.

Minor storm flows will be captured in stormwater pits; and conveyed in underground Reinforced Concrete Pipes (to the discharge points.

Major storm flows will be conveyed above ground via roads, road reserves, and dedicated open drains in the drainage reserves.

Some Lot filling has been shown to ensure the integrity of the overland stormwater drainage paths. The fill levels and stormwater regime will need to be verified during the initial part of the design phase.

Flood Inundation

The likely impact of flooding from Parker Creek was obtained from a document titled "QRA Flood Hazard Mapping – Mossman".

The document indicates that the Q_{100} (AEP 1%) flood level is RL 7.3m AHD, and that the Q_{500} (AEP 0.2%) flood level is RL 7.9m AHD.

The required flood immunity for this proposed development is Q_{100} which means that some parts of Lots 1, 6, and 9 will need to be filled to at least RL 7.3m AHD.

The amount of fill required on these Lots is minimal. We believe that it will have a negligible or / indeterminate impact on flooding in Parker Creek and / or Mossman or South Mossman Rivers.

The flood inundation of the site will need to be verified during the initial part of the design phase.

Other Considerations

It is possible that some of the existing material in the road corridors may be unsuitable for constructing pavements on without replacement or modification. The developer should allow a contingency in the financial model for this project for replacing unsuitable pavement material.

The infrastructure layouts and lot filling shown in this report are very preliminary. They are based on preliminary information and on preliminary design. Improvements and efficiencies to the infrastructure shown in this report may be achieved during the detailed design phase. Additional infrastructure may also be identified during the detailed design phase.

It may be prudent to obtain geotechnical testing of the site to determine likely pavement design parameters and also to determine the Site classifications.

The Developer will need to engage electrical engineers to design and document the electrical and communications systems.

The Developer will need to engage a landscape architect to design the landscape plans.

Contents

1. Introduction

In October 2014, Planning Plus (Town Planning and Project Management & Development Consultants), on behalf of NV & JS Pty Ltd (the Developer) commissioned Genesis Engineering (NQ) Pty Ltd (Genesis Engineering) to undertake a basic Pre DA assessment of water, sewerage and stormwater infrastructure for a proposed 19 Lot residential subdivision at Front Street, Mossman.

This assessment includes identifying the likely water, sewerage and stormwater infrastructure for the proposed development.

In undertaking this assessment, Genesis Engineering performed the following work scope:

- Desktop study to obtain relevant and available information on the site and proposed development;
- Email and Phone contact with Douglas Shire Council to obtain all relevant and available information such as water, sewerage and stormwater services locations, services capacities, flood studies, local knowledge and other relevant information;
- One day trip to Mossman and Douglas Shire Council from Cairns to:
    - meet the Client,
    - familiarise with the site,
    - meet Douglas Shire Council representatives,
    - obtain information from Council on location and capacity of existing stormwater, water and sewerage infrastructure, flooding etc;
- Provide preliminary advice of the proposed Lot layout regarding stormwater drainage, water and sewerage infrastructure including:
    - Comment on development constraints,
    - Lot layout,
    - Stormwater drainage infrastructure. External flooding will be based on advice from Council and on existing external catchment and flood information.
    - Council considerations and requirements,
    - Other issues or opportunities that arise.

The scope of this commission excludes:

- Hydrology and hydraulic assessment of the off-site external storm water regime;
- Hydraulic study of the creek / gully adjacent to the development;
- Assessing capacity of off-site sewerage infrastructure;
- Assessing capacity of off-site water infrastructure.

2. Background

NV & JS Pty Ltd proposes to subdivide Lot 12 on SP252360, at 46-62 Front Street, Mossman, into approximately 20 residential Lots ranging in size from 1,000m^2 to 1,400m^2.

The proposed development is shown on the following drawings which were provided to Genesis Engineering by Planning Plus, and which are contained in **Appendix A**:

- RPS Reconfiguration of a Lot, Proposed Residential Development, Cancelling Lot 12 on SP252360, Crawford Street, Mossman, Drawing No. PR124232-4 dated 24/11/2014;
- RPS Detail & Contour Survey, Drawing No. PR124232-1 dated 16/09/2014;
- Google earth snapshot of the site and surrounds.

The site is 3.63 hectare in area and it is accessed via Crawford Street. The western boundary of the site adjoins Mossman High School; and to the east is a creek and rural land, currently under cane. The southern boundary is vacant land which is under the ownership of Douglas Shire Council.

The land is currently located within the Mossman and Environs Locality and Community and Recreational Facilities Planning Area of the Douglas Shire Planning Scheme 2008.

NV & JS Pty Ltd intends to apply to rezone the land to Residential 1 as part of the Development Application process.

Genesis Engineering personnel visited the site and met with the Client and Council personnel on Friday 31st October 2014.

3. Initial comments

We provide the following initial comments that may need to be addressed pre DA. These comments are based on the Concept Layout Drawing Option 2, Detail and Contour Survey Drawing, and Google Earth image that are in **Appendix A**.

- The site has a ridge of approx. 8m to 9m AHD on the proposed road alignment. This seems a logical and practical place to locate the road.
- Existing Crawford Street is around RL 8.5m. The proposed road should join well with the existing Crawford St infrastructure.
- The site has a natural central high point which falls to the north, west and south. This appears good for storm water drainage.
- The eastern creek may impact on the site during flood events.
- The drainage easements seem to be well placed to drain the site and to convey storm water.
- Survey shows that external storm water enters the site from the School near proposed Lots 14, 13, 12, 11.
- Survey shows an existing Sewer Manhole on the site just past the end of Crawford St.
- Survey shows an existing Fire Hydrant in Crawford Street.
- Survey shows an existing Electrical supply and Telstra in Crawford St.
- Will need to liaise with Council to ascertain the capacity of existing water and sewer infrastructure and the ability of this existing infrastructure to service the proposed development.
- Does Client want to construct all lots as one stage, or will staging be needed?

4. Water Supply Infrastructure

A preliminary Water reticulation layout is shown on Sketch 01 in **Appendix B**. This layout has a supply from existing Council water supply infrastructure in Crawford Street.

The preliminary water reticulation layout shows a 100mm diameter water supply ring main in the road reserves, with 50mm diameter loop line in the main road to provide reticulation as required in FNQROC Development Manual.

The Open Space Lot 12 on SP252360 will also be connected to the water supply infrastructure.

The ability of the existing Council water supply infrastructure to provide adequate water Pressure and Flow to the proposed development was discussed with Council representatives on Friday 31st October at Douglas Shire Council.

Council was not able to provide the current water supply Pressure and Flow information, nor could Council confirm whether the current Council water supply infrastructure would be adequate to supply the proposed development.

Council's advice was that the Developer will need to arrange for Pressure and Flow testing to verify whether or not Council's existing water supply infrastructure is adequate to supply the proposed development.

This will need to be verified during the initial part of the design phase.

5. Sewerage Infrastructure

A preliminary Sewerage reticulation layout is shown on Sketch 01 in **Appendix B**. This layout discharges to an existing sewerage manhole at the end of Crawford Street.

The preliminary Sewerage reticulation layout is based on providing a 150mm diameter gravity sewerage system to as much of the site as possible.

Some of the Lots are lower than the sewerage manhole. A Sewerage Pump Station (SPS) has been shown on Lot 5. This SPS receives gravity sewerage from Lots 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 15.

The SPS has a Sewerage Rising Main (SRM) which conveys sewerage pumped from the SPS to the existing sewerage manhole at the end of Crawford Street.

Lots 1, 2, 3, 16, 17, 18 and 19 have separate 150mm diameter gravity sewerage mains discharging into the existing sewerage manhole at the end of Crawford Street.

The Open Space Lot 12 on SP252360 is not connected to the sewerage infrastructure.

Lots 1, 2, 3, 4, 5, 6, and 9 are shown with design fill levels. These design fill levels are shown as numbers in rectangles on Sketch 01 in **Appendix B**. These Lots have been shown as needing to be filled to obtain a more efficient gravity sewerage system.

These fill levels are preliminary and will be refined during the design phase.

The ability of the existing Council sewerage infrastructure to receive sewage generated by the proposed development was discussed with Council representatives on Friday 31st October at Douglas Shire Council.

Council was not able to confirm whether the current Council sewerage infrastructure is adequate to receive the sewage generated by the proposed development.

Council's advice was that the developer will need to provide Council with the various design sewerage flow rates, and then Council would be able to comment on the adequacy of existing Council sewerage infrastructure.

This will need to be verified during the initial part of the design phase.

6. Stormwater Drainage Infrastructure

A preliminary stormwater drainage layout is shown on Sketch 01 in **Appendix B**. This layout discharges in several locations to the adjoining Parker Creek which is east of the development.

The preliminary Stormwater drainage reticulation layout is based on capturing flows generated by minor storm events in stormwater pits; and conveying these minor flows underground in Reinforced Concrete Pipes (RCP's) to the discharge points.

Stormwater generated by major storm events will be conveyed above ground via roads, road reserves, and dedicated open drains in the drainage reserves.

Some Lot filling has been shown to ensure the integrity of the overland stormwater drainage paths. The fill levels and stormwater regime will need to be verified during the initial part of the design phase.

7. Flood Inundation

Council was not able to provide information on the external stormwater catchments, or on potential flooding or inundation from the adjoining Parker Creek to the east of the site.

The likely impact of flooding from Parker Creek was obtained from a document titled "*QRA Flood Hazard Mapping – Mossman"*, which was prepared by AECOM in April 2013. This document was obtained from the internet and is contained in **Appendix C.**

The document indicates that the Q_{100} (AEP 1%) flood level is RL 7.3m AHD at the site.

The document also indicates that the Q_{500} (AEP 0.2%) flood level is RL 7.9m AHD at the site.

The required flood immunity for this proposed development is Q_{100}.

Some parts of Lots 1, 6, and 9 are below the 7.3m AHD Q_{100} flood level.

This means that these Lots will need to be filled to above RL 7.3m AHD.

The design fill levels shown on Sketch 01 in **Appendix B** are all above the 0.1% AEP flood level of RL 7.3m AHD. They are also above the 0.2% AEP flood level of RL 7.9m AHD.

The amount of fill required on these Lots is minimal. It will have a negligible or / indeterminate impact on flooding in Parker Creek and / or Mossman or South Mossman Rivers.

The flood inundation of the site will need to be verified during the initial part of the design phase.

8. Road Pavement

Based on our knowledge and previous experience of designing subdivisions in the Port Douglas / Mossman region, we expect that some of the existing material in the road corridors may be unsuitable for constructing pavements on without replacement or modification.

The developer should allow a contingency in the financial model for this project for replacing unsuitable pavement material.

9. Detailed Design Phase

The infrastructure layouts and lot filling shown in this report are very preliminary. They are based on preliminary information and on preliminary design.

Improvements and efficiencies to the infrastructure shown in this report may be achieved during the detailed design phase. Additional infrastructure may also be identified during the detailed design phase.

10. Other Considerations

Other issues that may need to be considered if this project is to proceed to detailed design phase are:

- It may be prudent to obtain geotechnical testing of the site to determine likely pavement design parameters and also to determine the Site classifications.
- The Developer will need to engage electrical engineers to design and document the electrical and communications systems.
- The Developer will need to engage a landscape architect to design the landscape plans.

11. Conclusions

The Developer will need to arrange for water supply Pressure and Flow testing to verify whether or not the existing Council water supply infrastructure is adequate to supply the proposed development.

The various design sewerage flow rates will need to be calculated and provided to Council. Council will then be able to comment on the adequacy of existing Council sewerage infrastructure.

A Sewerage Pump Station and Sewerage Rising Main have been provided to service the lower Lots in the development. The remaining Lots are serviced by a gravity sewerage system.

Some Lots need to be filled to obtain a more efficient gravity sewerage system.

Some Lot filling has been shown to ensure the integrity of the overland stormwater drainage paths. The fill levels and stormwater regime will need to be verified during the initial part of the design phase.

The Q_{100} (AEP 1%) flood level is RL 7.3m AHD, and the Q_{500} (AEP 0.2%) flood level is RL 7.9m AHD at the site. This means that some Lots will need to be filled to above RL 7.3m AHD.

The amount of fill required on these Lots is minimal. It will have a negligible or / indeterminate impact on flooding in Parker Creek and / or Mossman or South Mossman Rivers.

The flood inundation of the site will need to be verified during the initial part of the design phase.

It may be prudent to obtain geotechnical testing of the site to determine likely pavement design parameters and also to determine the Site classifications.

The Developer will need to engage electrical engineers to design and document the electrical and communications systems.

The Developer will need to engage a landscape architect to design the landscape plans.

I am available at your convenience to discuss any aspect of this report, or to further assist you with implementing any of the recommended actions.

Yours Faithfully

Craig Waters

BEng, GDSTT, LGEng, RPEQ, CPEng, NPER, MIEAust, MIEPNG, RegEngPNG, AMIArb Aust

Principal Engineer / Managing Director

Appendix A –

RPS Reconfiguration of a Lot, Proposed Residential Development, Cancelling Lot 12 on SP252360, Crawford Street, Mossman, Drawing No. PR124232-4 dated 24/11/2014;

RPS Detail & Contour Survey, Drawing No. PR124232-1 dated 16/09/2014;

Google earth snapshot of the site and surrounds.

IMPORTANT NOTE

1. This plan was prepared for the sole purposes of the client for the specific purpose of accompanying an application to the Douglas Shire Council for a reconfiguration of a lot described on this plan. This plan is strictly limited to the Purpose and does not apply directly or indirectly and will not be used for any other application, purpose, use or matter. The plan is presented without the assumption of a duty of care to any other person (other than the Client) ("Third Party") and may not be relied on by Third Party.
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   C. any inaccuracies or other faults with information or data sourced from a Third Party;
   D. RPS Australia East Pty Ltd relying on surface indicators that are incorrect or inaccurate;
   E. the Client or any Third Party not verifying information in this plan where recommended by RPS Australia East Pty Ltd;
   F. lodgement of this plan with any local authority against the recommendation of RPS Australia East Pty Ltd;
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4. Scale shown is correct for the original plan and any copies of this plan should be verified by checking against the bar scale.
5. The dimensions, area, size and location of improvements, flood information (if shown) and number of lots shown on this plan are approximate only and may vary.
6. Cadastral boundaries are obtained by title dimensions and/or DCDB. These boundaries have not been verified and are approximate only.
7. The contours shown on this plan are by field survey and are suitable only for the purposes of this application. The accuracy of the contours has not been verified and no reliance should be placed upon such contours for any purpose other than for the purpose of this application for a reconfiguration of a lot.

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Based on or contains data provided by the State of Queensland (Department of Natural Resource & Mines) (2014). In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws.

The aerial photography used in this plan has not been rectified. The image has been overlaid as a best fit on the boundaries shown and position is approximate only.

Date of Capture: 28 / 9 / 2013.
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Number of Lots:	19
Minimum Area:	1000m²
Average Area:	1232m²
Length New Road:	447m
Subject Lot 12 Area	3.638 ha
Less Passive Open Space / Creek setback:	4495m²
Developable Area	3.1885 ha

LEGEND

- Road Crown
- Edge of Bitumen
- Invert of Open Drain
- Drainage Pipe U/G
- Sewer Manhole
- Fire Hydrant
- Water Meter
- Electricity Cable A/G
- Elec Pole
- Telstra Pit
- Top of Bank
- Toe of Bank
- Fence
- Drainage Path

NOTES

Level Datum: AHD

Origin of Levels: PSM 52406
RL 9.293

Meridian: SP252360

Origin of Coordinates: PSM 96085
E: 5002.531
N: 10000.315

Contour Interval: 0.2m
Index: 1.0m

0 5 10 15 20 25 metres

SCALE 1:500 IS APPLICABLE ONLY TO THE ORIGINAL SHEET SIZE. (A1) (1:1000 @ A3)

AMENDMENTS

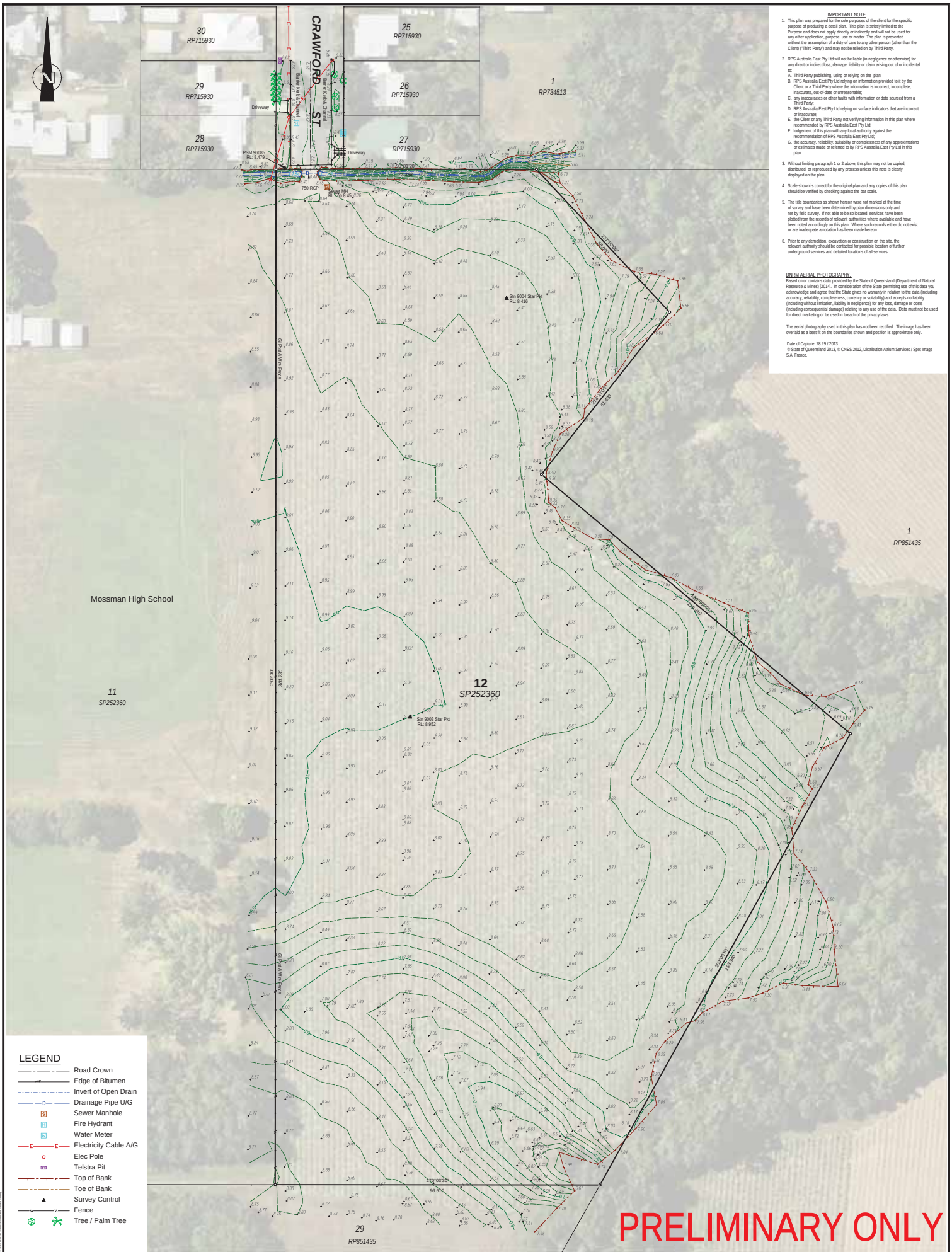
PROJECT MANAGER: A. Kerlin
SURVEYED: MW 15/9/2014
COMPILED: AMK
CAD REF: PR124232-4.DWG
124232-201.ccx
SHEET 1 OF SHEETS 1
SHEET SIZE: A1

NV & JS PTY LTD

RECONFIGURATION OF A LOT
PROPOSED RESIDENTIAL DEVELOPMENT
CANCELLING LOT 12 ON SP252360
CRAWFORD ST MOSSMAN

RPS Australia East Pty Ltd
ACN 140 292 762
135 Abbott St
PO Box 1949
CAIRNS QLD 4870
T +61 7 4031 1336
F +61 7 4031 2942
W rpsgroup.com.au

SCALE 1:500 | DATE 24/11/2014 | DRAWING NO. PR124232-4 | ISSUE



LEGEND

- Road Crown
- Edge of Bitumen
- Invert of Open Drain
- Drainage Pipe U/G
- Sewer Manhole
- Fire Hydrant
- Water Meter
- Electricity Cable A/G
- Elec Pole
- Telstra Pit
- Top of Bank
- Toe of Bank
- Survey Control
- Fence
- Tree / Palm Tree

IMPORTANT NOTE

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   B. RPS Australia East Pty Ltd relying on information provided to it by the Client or a Third Party where the information is incorrect, incomplete, inaccurate, out-of-date or unreasonable;
   C. any inaccuracies or other faults with information or data sourced from a Third Party;
   D. RPS Australia East Pty Ltd relying on surface indicators that are incorrect or inaccurate;
   E. the Client or any Third Party not verifying information in this plan where recommended by RPS Australia East Pty Ltd;
   F. lodgement of this plan with any local authority against the recommendation of RPS Australia East Pty Ltd;
   G. the accuracy, reliability, suitability or completeness of any approximations or estimates made or referred to by RPS Australia East Pty Ltd in this plan.
3. Without limiting paragraph 1 or 2 above, this plan may not be copied, distributed, or reproduced by any process unless this note is clearly displayed on the plan.
4. Scale shown is correct for the original plan and any copies of this plan should be verified by checking against the bar scale.
5. The title boundaries as shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey. If not able to be so located, services have been plotted from the records of relevant authorities where available and have been noted accordingly on this plan. Where such records either do not exist or are inadequate a notation has been made hereon.
6. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

DNRM AERIAL PHOTOGRAPHY

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The aerial photography used in this plan has not been rectified. The image has been overlaid as a best fit on the boundaries shown and position is approximate only.

Date of Capture: 28 / 9 / 2013.
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PRELIMINARY ONLY

NOTES

Level Datum: AHD

Origin of Levels: PSM 52406
RL 9.293

Meridian: SP252360

Origin of Coordinates: PSM 96085
E: 5002.531
N: 10000.315

Contour Interval: 0.2m
Index: 1.0m

0 5 10 15 20 25
metres

SCALE 1:500 IS APPLICABLE ONLY TO THE ORIGINAL SHEET SIZE. (A1)
(1:1000 @ A3)

AMENDMENTS	PROJECT MANAGER	
	A. Kerlin	
	SURVEYED	
	MW	15/9/2014
	COMPILED	
	AMK	
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PR124232-1.DWG		A1
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NV & JS PTY LTD

DETAIL & CONTOUR SURVEY

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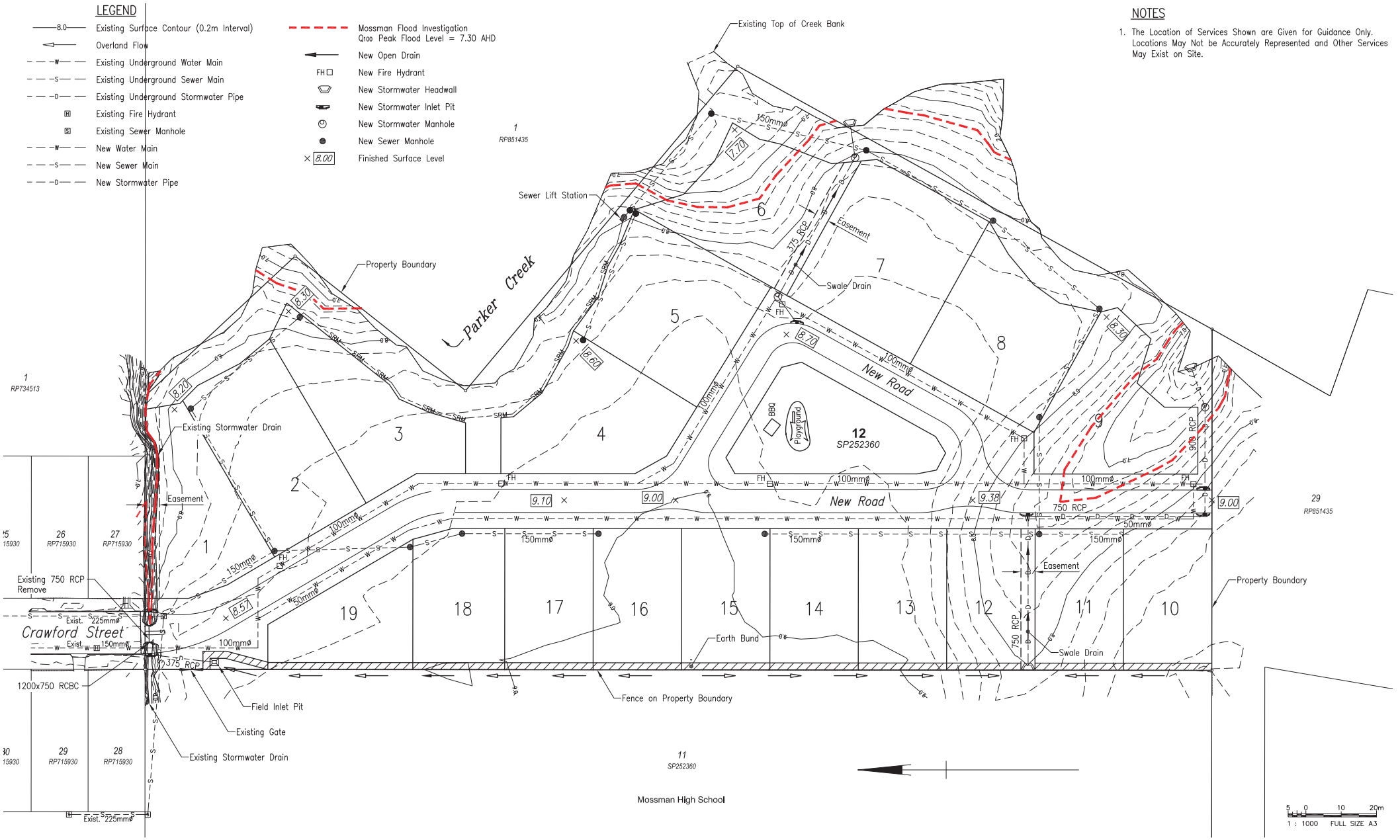
SCALE	DATE	DRAWING NO.	ISSUE
1:500	16/9/2014	PR124232-1	


Lot 12 on SP252360
46/62 Front St, Mossman QLD 4873, Australia
© State of Queensland 2014, © CNES 2012, Distribution Astrium Services / Spot Image S.A France.
Google earth
Imagery Date: 9/28/2013 16°27'52.34" S 145°22'38.31" E elev 12 m eye alt 1.02 km

Appendix B –

Sketch 01 - Concept Design Stormwater, Water and Sewerage

for Reconfiguration Approval, dated 17/11/2014.



Rev	Description	Date
A	Reconfiguration Approval	17/11/14

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CLIENT	NV & JS PTY LTD		
DESIGNER	TWV	DRAFTER	TWV
PROJECT	CRAWFORD STREET SUBDIVISION MOSSMAN		

TITLE

CONCEPT DESIGN STORMWATER, WATER AND SEWERAGE FOR RECONFIGURATION APPROVAL

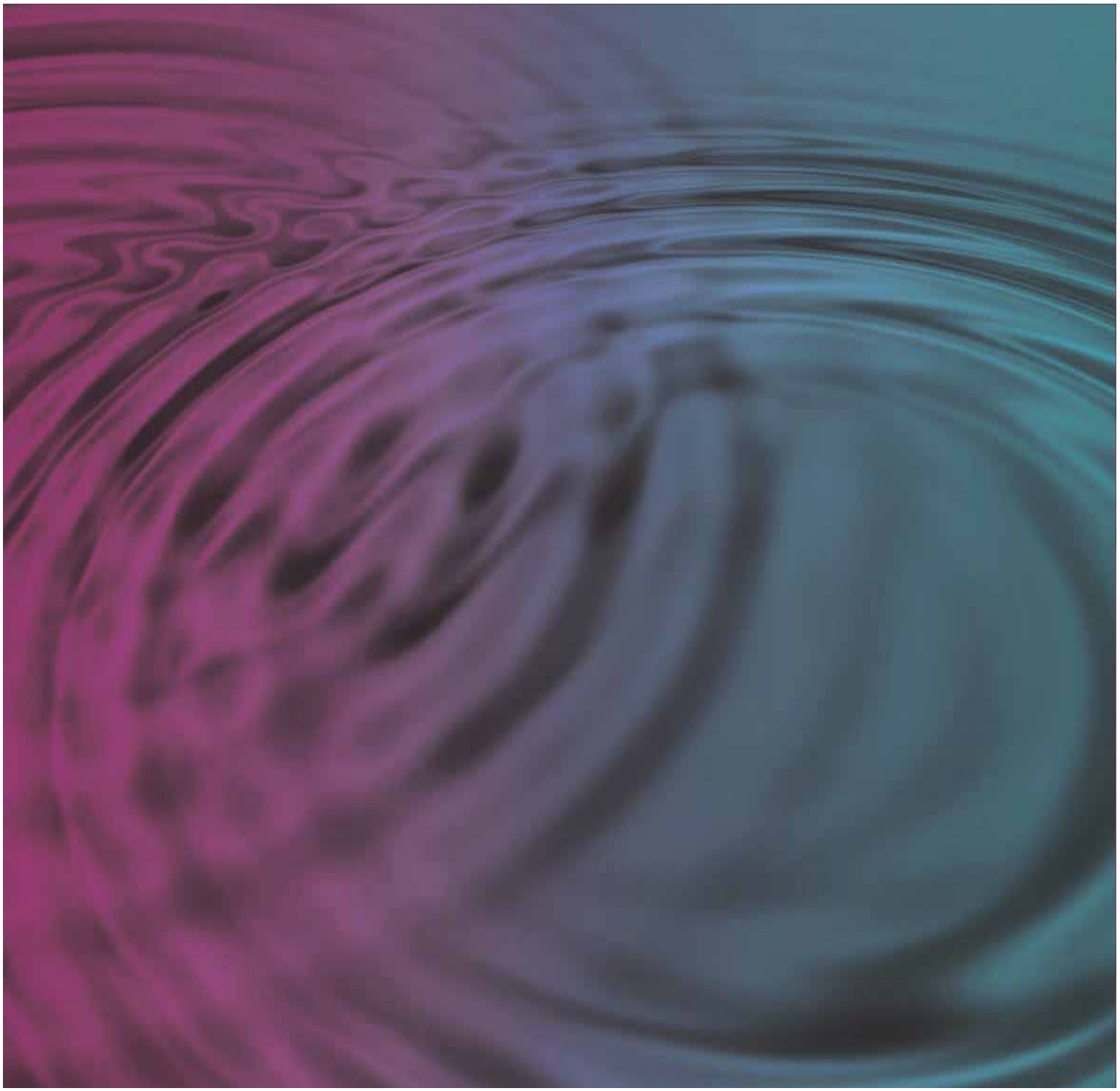
Scale At A3:	Project No	DRAWING No	Rev
1/1000	140923	SKETCH 01	A

Appendix C –

QRA Flood Hazard Mapping – Mossman", AECOM, April 2013.

QRA Flood Hazard Mapping

Mossman



QRA Flood Hazard Mapping

Mossman

Prepared for

Queensland Reconstruction Authority

Prepared by

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15 April 2013

60277715

AECOM in Australia and New Zealand is certified to the latest version of ISO9001 and ISO14001.

Quality Information

Document QRA Flood Hazard Mapping

Ref 60277715

Date 15 April 2013

Prepared by Sam Hawker and Ari Craven

Reviewed by Silver Yance

Revision History

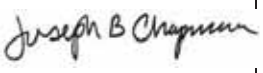
Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
0	15-Apr-2013	For Issue	Joe Chapman Project Director	

Table of Contents

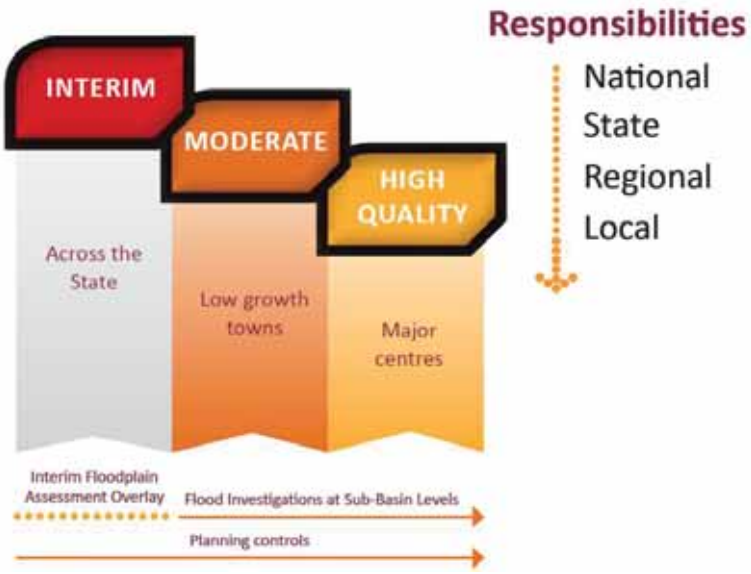
1.0 Introduction

1.1 Background

1.1.1 Queensland Flood Mapping Program

In response to the 2010/2011 floods and subsequent Queensland Floods Commission of Inquiry the Queensland Reconstruction Authority (QRA) released the two part guideline - *Planning for stronger, more resilient floodplains*. Central to these guidelines is the Queensland Flood Mapping Program (QFMP) which seeks to address a number of the Commission recommendations by establishing flood and flood hazard mapping across the state. In the implementation of the QFMP QRA has identified three levels of fit-for-purpose floodplain mapping, shown in Figure 1. These are also referred to as 'level 1', 'level 2' and 'level 3' studies.

Figure 1 – Floodplain mapping levels (Source: *Planning for stronger, more resilient floodplains, QRA)*



In delivering Part 1 of *Planning for stronger, more resilient floodplains* QRA produced the Interim Floodplain Assessment Overlay (IFAO). The IFAO was successful in delivering base level information on areas of potential flood risk across the entire state of Queensland.

QRA is now seeking to deliver the second level of floodplain mapping for townships identified in conjunction with the Bureau of Meteorology (BoM) across Queensland. Using flow information derived in the most part from river gauging, two-dimensional hydrodynamic modelling has been undertaken to map flood extent and flood hazard for the selected townships. This type of study is referred to as a level 2 study.

The purpose of these level 2 studies is to provide a basic level of detail around flood depths and flood hazard for the identified townships. It is envisioned that the results of these studies will be used to inform planning decisions and emergency management, resulting in more resilient communities. This approach is considered fit-for-purpose and represents a major step forward in terms of the flood hazard information available to these communities.

As part of this second phase of floodplain mapping QRA have engaged AECOM to undertake a level 2 study for the Township of Mossman. This report outlines the available data, methodology used and mapping outcomes for the Mossman study. The report also includes recommendations to further improve model accuracy.

1.1.2 Model Location

The Mossman hydraulic model encompasses the urban areas of Mossman and surrounding rural areas. Mossman is part of the Cairns Regional Council Local Government Area (LGA) and the population is approximately 1700 (based on 2011 census). Mossman is located approximately 65km north-northwest of Cairns and is at the confluence of the Mossman and South Mossman Rivers. The town is also bordered to the east by Parker Creek and to the west by Marrs Creek.

The hydraulic model extent is shown in Figure 5. The model represents an approximately 5.5km stretch of the Mossman River, beginning approximately 3.5km upstream of DNRM river gauging station 109001A to a location approximately 2km downstream of the gauge, approximately past the confluence with the South Mossman River.

1.2 Scope

The scope of this study includes:

- development of a 2D hydrodynamic model of Mossman and surrounding floodplain
- validation of the model using historic flood level and/or inundation extents supplied by QRA
- modelling of the 2%, 1% and 0.2% year Annual Exceedance Probability (AEP) design events
- delivery of report and flood inundation, depth, velocity and hazard mapping products
- Supply of animation and associated commentary of each design flood event

2.0 Available Data

2.1 Streamflow Data

Design flood flows and historic flood flows for the Mossman River have been provided by QRA. Flows have been derived from a flood frequency analysis (FFA) of DNRM river gauging station 109001A (BoM gauge 531063). A hydrograph for the March 2008 flood event was supplied by QRA at an hourly timestep. No flows for the South Mossman River were provided. Specific details of the design flood flows and historic flood flows are contained in Section 3.1.

2.2 Topographic Information

A Digital Elevation Model (DEM) based on LiDAR survey data over the entire model area has been provided by QRA. The supplied DEM has a 1m grid resolution. No additional survey data (e.g., bathymetry) has been provided as part of this study. No metadata was supplied with the DEM and as such it is unclear the date on which the raw data was collected and the identity of the collection company.

2.3 Surveyed Flood Levels

As part of the data supplied for this study QRA have provided a single surveyed flood mark for the March 2008 flood event. This flood mark is located in Rotary Park on the northern side of the Township. This was used in combination with the level recorded at DNRM gauge 109001A for validation.

2.4 Mapping Product Data

Mapping templates including all spatial data (excluding model output) were provided by QRA. This included:

- areas of interest
- gauge locations
- cadastre
- Local features etc.

2.5 Aerial Photography

High-resolution aerial photography of the study area has been provided by QRA. No metadata for the aerial imagery was available for review so no confirmation of date taken or resolution can be made.

3.0 Methodology

3.1 Hydrologic Inputs

Mossman is located at the confluence of the Mossman and South Mossman Rivers. Flows from both these watercourses will be important when considering river flooding impacts on the Mossman Township.

3.1.1 Validation Event Hydrology

3.1.1.1 Mossman River

Mossman River flows for the March 2008 flood event have been supplied by QRA. Table 1 summarises key details of the validation event data.

Table 1 Validation Event Hydrology

DNRM Flow Gauge Number	Event	Peak Flow (m^3/s)	BoM River Height Gauge Number	Recorded Peak Flood Level (mAHD)
109001A	Mar, 2008	628	531063	6.46

The flow hydrograph for the March 2008 flood event as recorded at DNRM gauge 109001A is shown in Figure 2.

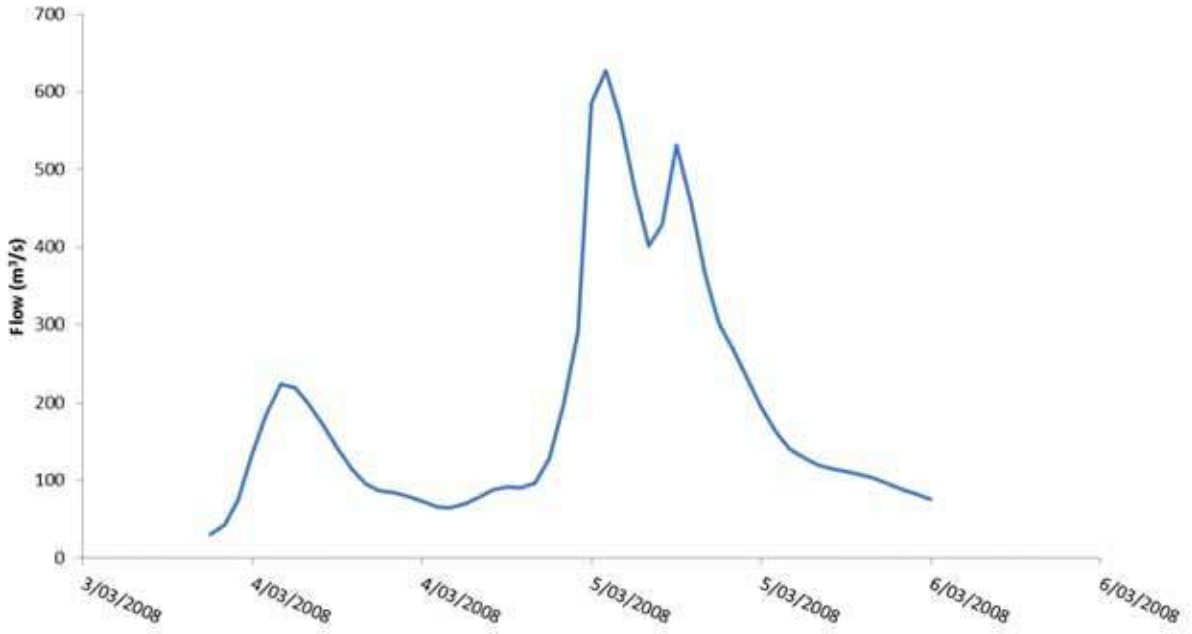


Figure 2 Flow hydrograph for the March 2008 flood event.

3.1.1.2 South Mossman River

No gauge data exists for the South Mossman River and was not within the scope of this study to undertake hydrologic modelling for this watercourse. Flows for the March 2008 event have been estimated by scaling the Mossman River flows using the difference in catchment areas between the two rivers. The scaling factor used is shown in Table 2.

Table 2 South Mossman River Peak Flow Scaling

Parameter	Value
Mossman River Catchment Area (km^2)	106
South Mossman River Catchment Area (km^2)	89
Scale Factor	0.84

The scaling factor was then applied to the March 2008 event hydrograph for the Mossman River (Figure 2) to give inflows for the South Mossman River.

3.1.2 Design Event Hydrology

3.1.2.1 Mossman River

Design event flows for the Mossman River have been supplied by QRA. Design flows have been derived from an Flood Frequency Analysis (FFA) at DNRM gauge 109001A. Results of the supplied FFA are shown in Table 3. From the supplied probability limits there is significant uncertainty in the FFA predictions. The range represented by the 90% quantile probability limits is up to 75% of the peak flow estimate. The level of uncertainty in the FFA is due to the limited period of record at the gauge; only 39 years of records were available. Section 6.0 further describes recommendations on how to improve the study and reduce the level of uncertainty in the future.

Table 3 FFA for the Mossman River at DNRM Gauge 109001A

Annual Exceedence Probability (%)	Peak Discharge (m^3/s)	Monte Carlo 90% quantile probability limits		Peak Level (m Gauge Datum)	Peak Level (m AHD)
10	750	610	940	7.9	6.7
5	910	740	1200	8.1	6.9
2	1100	890	1500	8.4	7.1
1	1200	980	1800	8.5	7.3
0.5	1400	1100	2100	8.6	7.4
0.2	1500	1200	2500	8.8	7.5

Design flood event flows have been applied to the model using the same hydrograph used in the model validation (Figure 2), with peak flows scaled to those shown above in Table 3. Figure 3 shows the adopted design flood event hydrographs.

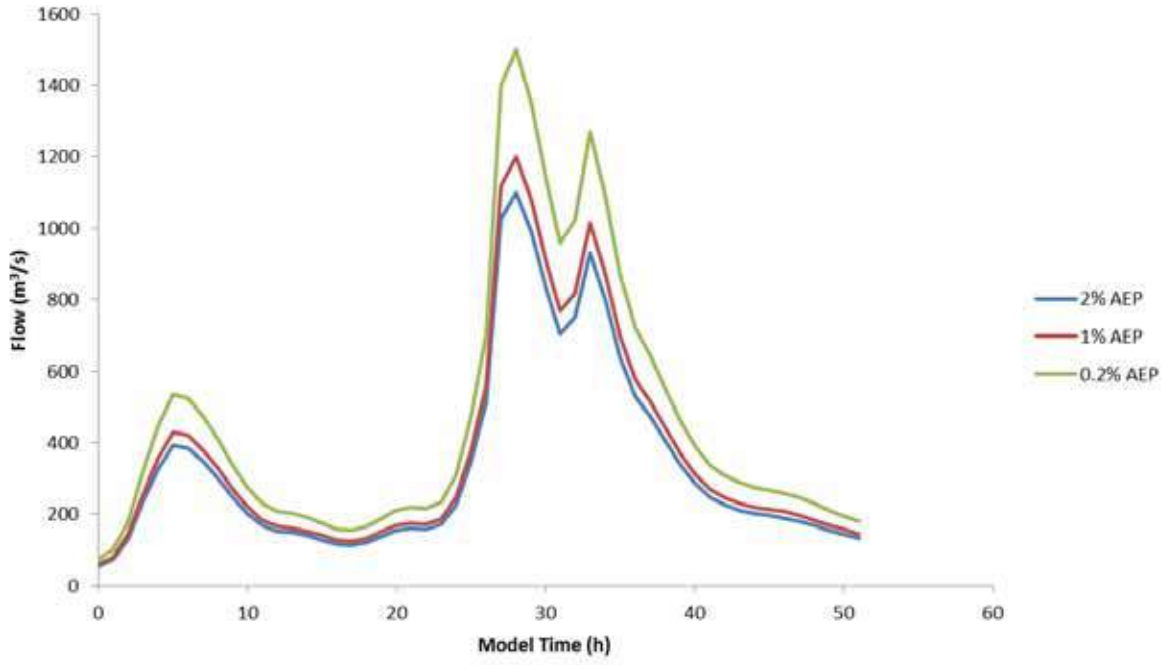


Figure 3 Adopted design flood event hydrographs – Mossman River

3.1.2.2 South Mossman River

An estimate of the peak design flows for the South Mossman River was made using two methods;

- By scaling the Mossman River peak flows using the proportional difference in catchment areas (as used in model verification).
- Using the rational method as presented in Australian Rainfall & Runoff (AR&R, 1998).

A summary of the results of the peak flow estimates are shown in Table 4. It is noted that the catchment area of the South Mossman River is significantly larger than accepted limits of applicability of the rational method (typically 25 km^2).

Table 4 Peak Flow Estimation for South Mossman River

AEP (%)	Method	
	Flow Scaling	Rational Method
2	1008	1031
1	1092	1185
0.2	1344	N/A*

** Rational method is applicable to design flows up to 1% AEP*

The flow scaling and rational methods produced very similar estimates of peak design flows. For consistency, peak flow estimates derived from the flow scaling method have been used as model inputs.

Design flood event flows have been applied to the model using the same hydrograph used in the model validation (Figure 2), with peak flows scaled to those shown above in Table 4. Figure 4 shows the adopted design event hydrographs.

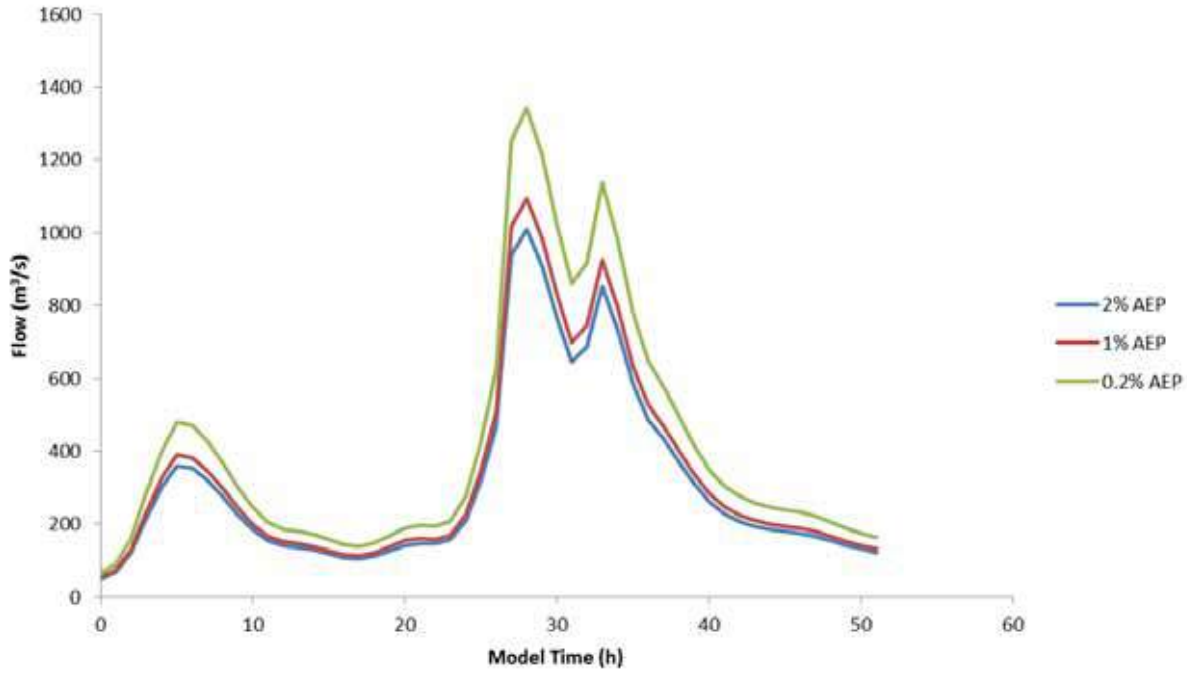


Figure 4 **Adopted design event hydrographs – South Mossman River**

3.2 Hydraulic Modelling

3.2.1 TUFLOW Modelling System

The TUFLOW modelling package was selected to create the 2D model for this study. TUFLOW is a powerful computational engine that provides one-dimensional (1D) and two-dimensional (2D) solutions of the free-surface flow equations to simulate flood and tidal wave propagation. TUFLOW is ideally suited to modeling flooding of rivers and creeks such as those investigated in this study. TUFLOW also lends itself to rapid model establishment and mapping through its compatibility with both MapInfo and ArcGIS and flexible output formats.

3.2.2 Domains, Grid Size and Time Step

A single 2D domain has been used with a grid size of 10m. A timestep of 2 seconds has been used which has resulted in a stable model configuration.

3.2.3 Topography

Model elevations have been derived from the 1m DEM supplied by QRA. The DEM has been created from LiDAR survey. The DEM has been read directly into the TUFLOW modelling system. No additional sources of model geometry have been used.

3.2.4 Manning's 'n' Roughness Values

Industry standard Manning's 'n' values have been applied in the model. Land use types have been digitised from the provided aerial photography. Table 5 summarises the Manning's 'n' values used. A concise set of Manning's n values was been to simplify the modelling process.

Table 5 **Manning's 'n' values**

Material Type	Manning's 'n' Value
Channels	0.03
General Model Domain	0.04
Dense Vegetation	0.08
Urban Areas	0.06

3.2.5 Model Boundaries

3.2.5.1 Upstream Boundary

Inflow hydrographs have been applied at the upstream model boundaries for both validation and design events. All inflow hydrographs have been derived from the recorded hydrograph for the March 2008 event. See Section 3.1 for details. The upstream boundary was set based on available terrain data (refer Figure 5).

3.2.5.2 Downstream Boundary

As no applicable tailwater levels were available during the course of this study an automatically created stage–discharge relationship was used as the downstream condition for design events. This relationship was set such that the water surface gradient at the boundary was 1% (0.01 m/m).

The downstream boundary has been placed a reasonable distance downstream of the area of interest to minimise any boundary effects (refer Figure 5).

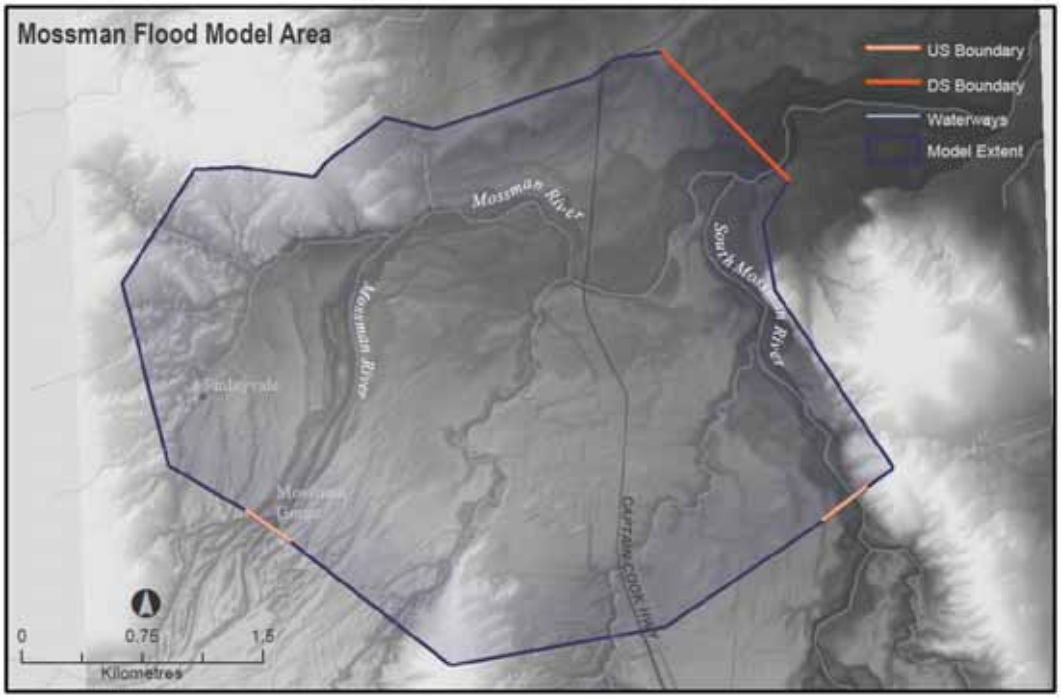


Figure 5 Hydraulic model boundary

3.3 Validation Methodology

Two known flood levels for the March 2008 event were supplied as part of this study, these are;

- the surveyed flood mark at Rotary Park
- the recorded level at DNRM gauge 109001A.

It is noted that on comparison of the locations of these points it is evident that they are in approximately the same location (see mapping products), and as such represent redundant information.

Based on direction from QRA it was deemed that an acceptable level of accuracy for the purposes of this study was predicted flood levels being within ±0.5m of the observed levels for the March 2008 flood event.

3.4 Mapping Products

Mapping products based on velocity, depth and hazard (velocity x depth) have been produced based on QRA templates. The following fourteen (14) mapping products have been produced as part of this project:

- a map showing the extent of the nominated validation event overlaying aerial photography

- a map showing the extent of the nominated validation event and three design events overlaying the planning scheme.

For each of the events (design and validation) the following were produced:

- a four classification hazard map over aerial photography
- a five category map showing the depth components of the hazard map on aerial photography
- a five category map showing the velocity (max) components of the hazard map on aerial photography.

All depth, velocity and hazard classification have been provided by QRA.

3.5 Flood Hazard

Depth and velocity classifications are shown on the respective mapping products, with the supplied hazard classification system shown below in Figure 6.

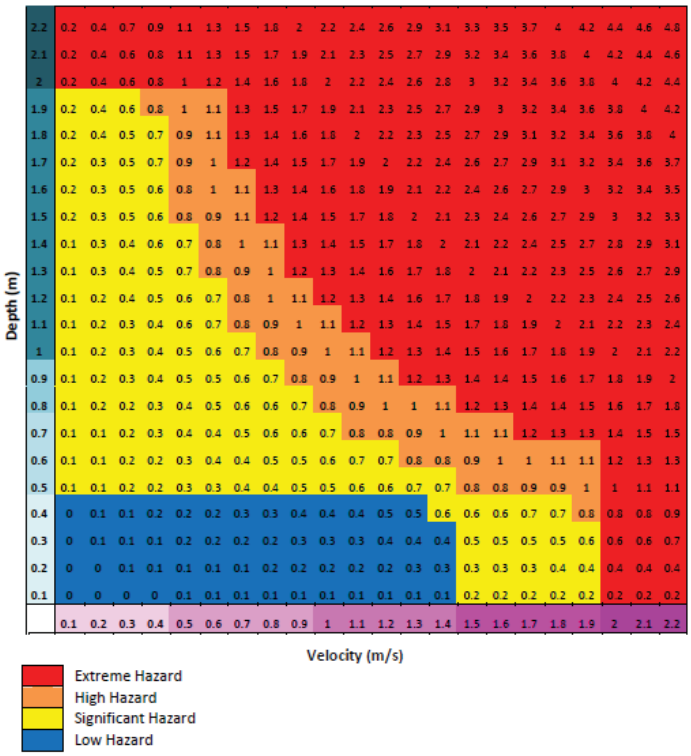


Figure 6 Flood Hazard Criteria (Source; QRA)

The flood hazard criteria used in the flood hazard maps is based on the Schedule 4 on page 45 in the Planning for stronger, more resilient floodplains Part 2 – Measures to support floodplain management in future planning schemes (QRA, 2012).

The flood hazard criteria were prepared by QRA for use in preparing flood investigations (level 2), and planning evaluations based on latest available engineering guidance. The low hazard category was mainly based on the Australian Rainfall and Runoff (ARR) Revision Project 10: Appropriate Safety Criteria for People (Engineers Australia Water Engineering, 2010) and the ARR Revision Project 10 Stage 2 Report: Appropriate Safety Criteria for Vehicles (Draft) (Engineers Australia Water Engineering, 2011).

In the ARR Revision Project 10: Appropriate Safety Criteria for People, the Low Hazard category is for conditions where stability is uncompromised for persons within a laboratory test program at these flows (to maximum flow depth of 0.5 m for children and 1.2 m for adults and a maximum velocity of 3.0 ms^{-1} at shallow depths).

It is noted within the report that loss of stability could occur in lower flows when adverse conditions are encountered including:

- **Bottom conditions:** uneven, slippery, obstacles;

- **Flow conditions:** floating debris, low temperature, poor visibility, unsteady and flow aeration;
- **Human subject:** standing or moving, experience and training, clothing and footwear, physical attributes additional to height and mass including muscular development and/or disability, psychological factors;
- **Others:** strong wind, poor lighting, definition of stability limit (i.e. feeling unsafe or complete loss of footing).'

There are also caveats on the criteria for stability of vehicles. It should be noted that the low flow criteria applies to large 4WD vehicles. Small passenger vehicle may not be safe in this category.

The QRA flood hazard criteria are only interim guidelines and local authorities may wish to use different criteria based on local experience. One alternative is given in Appendix J of Floodplain Management in Australia: best practice principles and guidelines SCARM Report 73 (ARMCANZ, 2000).

3.6 Animations

Flood animations of all flood events (validation and design) have been created using the SMS software package. Flood animations have been based on flood depth values, with flood direction arrows also indicated.

4.0 Results

4.1 Validation Event

Table 6 presents the difference between modelled flood levels for the March flood 2008 event and recorded levels. Validation event mapping is presented in Appendix A.

Table 6 Validation Event Results

Location	Modelled Level (mAHD)	Recorded Level (mAHD)	Difference (m)
Rotary Park (surveyed flood mark)	6.3	6.2	+0.1
DNRM Gauge 109001A	6.0	6.46	-0.46

Table 6 shows the modelled validation event is within acceptable limits of accuracy as described in Section 3.3. As noted in Section 3.3 both locations are within close proximity to each other.

4.2 Design Events

The 2%, 1% and 0.2% AEP events were modelled during this study. Mapping results are given in Appendix A. Flood levels at DNRM Gauge 109001A for each of the design events are given in Table 7.

Table 7 Design Flood Levels at DNRM Gauge 109001A

Design Event (AEP, %)	Modelled Flood Level (mAHD) (at location of gauge 109001A)
2	6.48
1	6.57
0.2	6.89

Based on the results of the design event modelling the following key points can be made:

- Access to the Township is likely to be severely limited during flood events. For all modelled events both the Captain Cook Highway and Junction Road to the north of the Township are likely to be cut. The Captain Cook Highway also crosses the South Mossman River to the south of the township. This area has not been modelled as part of this study but access to the south may also be severely limited.
- In the 2% and 1% AEP events, although significant flooding is observed only a few properties appear to be at risk. Areas at risk during these events are;
    - Properties on the northern side of the Mossman River
    - Properties at the northern end of Mossman Township (i.e. along the southern bank of the Mossman River)
    - Properties along the eastern edge of the Mossman Township
- In the 0.2% AEP event significant flooding is also seen east of the Captain Cook Highway, with many properties at risk.

5.0 Discussion

5.1 Model Uncertainty

This study has been undertaken based on a limited scope, simplified methodology and a limited set of input data. As such it is expected that this study is subject to significant uncertainty is regards to the accuracy of the results presented. The following areas of uncertainty have been identified in the course of this study:

Hydrologic Data: The level of uncertainty in the FFA used as the basis for design flows in this study is high. This is due to there being a limited length of record available at the gauge. The methods used to estimate flows in the South Mossman River are also approximate at best and are likely to contain significant error. Applying inflows based on a scaled historic hydrograph is also an approximation and likely to contribute to uncertainty.

Bathymetric Data: As no bathymetric data has been used as part of this study there is likely to be uncertainty in the amount of flow conveyed by the river channel. This will be most pronounced in areas where river conveyance is significant compared to floodplain conveyance.

Manning's 'n' Values: Only a limited set of Manning's 'n' values have been used in this study. This may affect flowpaths, flood heights and water velocities, particularly in urban areas. However, other items discussed in this section likely represent greater model uncertainty and should be the primary focus of any model updates.

Hydraulic Structures: No bridge or culvert data was used as part of this study. Road crossing are present on both the Mossman and South Mossman Rivers along with local creeks. Although calibration was within 0.2m of observed flood levels upstream of the Captain Cook Hwy crossing at the Mossman River, this corresponds to a less than 10% AEP flood event that was conveyed through the bridge. A larger flood event could result in overtopping and/or greater debris and therefore greater flooding than indicated in this study. In addition, local creek bridges could produce greater flooding for small storm events than indicated (for example, Gorge Road bridge appears especially prone to blockage and debris given its smaller size and large amount of vegetation). These smaller creek bridges would likely have less impact during larger floods such as the 1% AEP.

Local Catchment Flows: Although the scope of this study was to consider river flooding only, peak flood levels in Mossman may be a result of coincident local and river flooding events.

Coastal Influences: Due to its proximity to the coast, Mossman is likely to be influenced by coastal processes. As with local flooding, peak flood levels in Mossman may be a result of coincident river and storm surge flooding.

Validation Data: Limited validation data exists for this area. Although this has no direct effect on modelling results it limits the level at which model uncertainty can be characterised. Results of the validation event model showed a difference of 0.1m to 0.5m between predicted and observed flood levels. This should be interpreted as the minimum level of uncertainty in the modelled results.

5.2 Use of Model Results and Mapping Products

Due to the methodology used and the level of uncertainty in the modelling outputs as outlined in the previous section, due care should be exercised when interpreting or using these mapping products. The results presented should be taken as indicative only.

6.0 Conclusions & Recommendations

A simple 2D hydrodynamic model has been developed for the area surrounding the Township of Mossman. Both historic and design flood events have been modelled to determine flooding behaviour in and around the Town. Modelled events were:

- The March 2008 flood event
- The 2%, 1% and 0.2% AEP design events.

The model results indicate that areas of Mossman are potentially at risk of flooding from the Mossman and South Mossman River and access to the Town is likely to be severely limited or non-existent in the range of flood events modelled.

Flood depth, velocity and hazard mapping products have been produced as part of this study. Based on the inherent uncertainty in the approach and data used, due care needs to be applied when using these products.

Based on the outcomes of this study the following recommendations are made that could improve the quality of this study in the future:

- A hydrology model of both the Mossman and South Mossman Rivers should be developed to improve the hydrology inputs and supplement the FFA.
- Bathymetry data should be incorporated into the model to correctly model channel conveyance, including potentially 1D-2D linked nodes to simulate the local creeks if more detail is desired during smaller flood events.
- Structures including culverts, bridges and weirs should be incorporated into the model to represent potential backwater effects.
- Coincident flooding between local catchment events, river flooding and storm surge should be investigated.
- Breaklines (centrelines) should be developed for major roads and other elevated features that impact flooding and used to set grid elevations within the model. This would provide a more accurate representation of crest elevations within the hydraulic model.
- The model should be further calibrated and validated to at least one, preferably two, calibration events and one additional verification event. Ideally a larger storm event than the March 2008 flood would be used, potentially the January 2013 flood. Additional observed data for each storm should also be utilized, including aerial imagery, surveyed high water marks, gauge records, and anecdotal information (e.g., photos, observations on timing and extent of flooding, etc.).
- A community survey should be undertaken to improve the level of flooding background information and to identify other sources of flood calibration data.
- Given the potential for the community to be isolated, detailed survey of road crossings on both rivers and local creeks should be incorporated.

7.0 References

Australian Rainfall and Runoff: A Guide to Flood Estimation (1998), Institute of Engineers Australia

Australian Rainfall and Runoff Project 10: Appropriate Safety Criteria for People Stage 1 Report (2010), Engineers Australia Water Engineering

Australian Rainfall and Runoff Project 10: Appropriate Safety Criteria for Vehicles Stage 2 Report (Draft) (2011), Engineers Australia Water Engineering

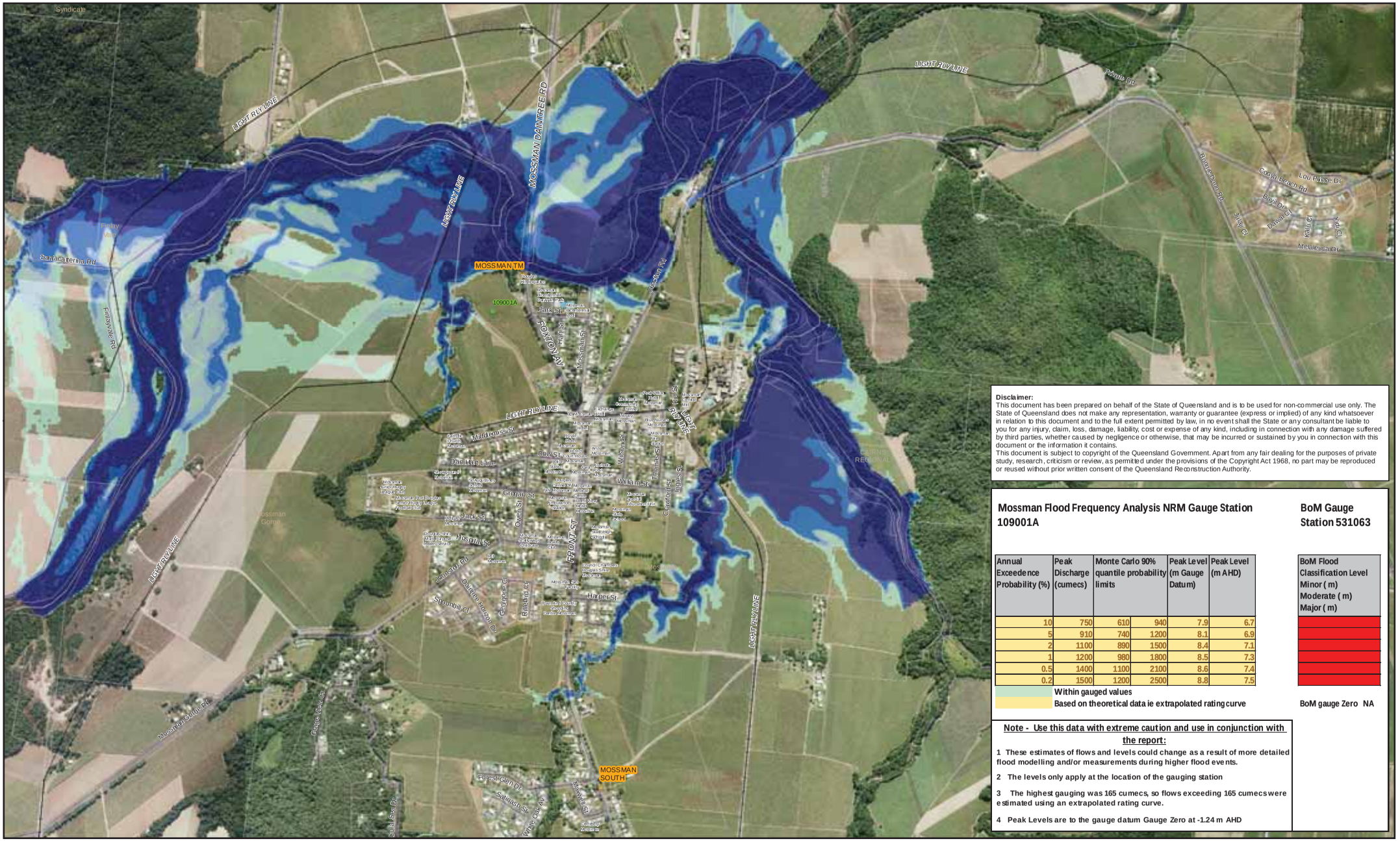
Floodplain Management in Australia: best practice principles and guidelines SCARM Report 73 (2000), Agricultural and Resource Management Council of Australia and New Zealand

Planning for stronger, more resilient floodplains, Part 1 – Interim measures to support floodplain management in existing planning schemes (2012), Queensland Reconstruction Authority

Planning for stronger, more resilient floodplains, Part 2 – Measures to support floodplain management in future planning schemes (2012), Queensland Reconstruction Authority

Appendix A

Mapping Products



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Mossman Flood Frequency Analysis NRM Gauge Station 109001A

BoM Gauge Station 531063

Annual Exceedence Probability (%)	Peak Discharge (cumecs)	Monte Carlo 90% quantile probability limits		Peak Level (m Gauge Datum)	Peak Level (m AHD)
10	750	610	940	7.9	6.7
5	910	740	1200	8.1	6.9
2	1100	890	1500	8.4	7.1
1	1200	980	1800	8.5	7.3
0.5	1400	1100	2100	8.6	7.4
0.2	1500	1200	2500	8.8	7.5

Within gauged values
Based on theoretical data ie extrapolated rating curve

BoM Flood Classification Level
Minor (m)
Moderate (m)
Major (m)

BoM gauge Zero NA

Note - Use this data with extreme caution and use in conjunction with the report:

1 These estimates of flows and levels could change as a result of more detailed flood modelling and/or measurements during higher flood events.

2 The levels only apply at the location of the gauging station

3 The highest gauging was 165 cumecs, so flows exceeding 165 cumecs were estimated using an extrapolated rating curve.

4 Peak Levels are to the gauge datum Gauge Zero at -1.24 m AHD

AECOM
www.aecom.com

Points of interest
Roads
Rail
BoM gauging station
NRM gauging station
Cadastre

Depth (m)
0 - 0.5
0.5 - 0.8
0.8 - 1
1-2
>2

Local Authority: Cairns Regional
Locality: Mossman
Projection: GDA 1994 MGA Zone 55
Datum: GDA 1994

Queensland Reconstruction Authority
1800 110 841
www.qldreconstruction.org.au

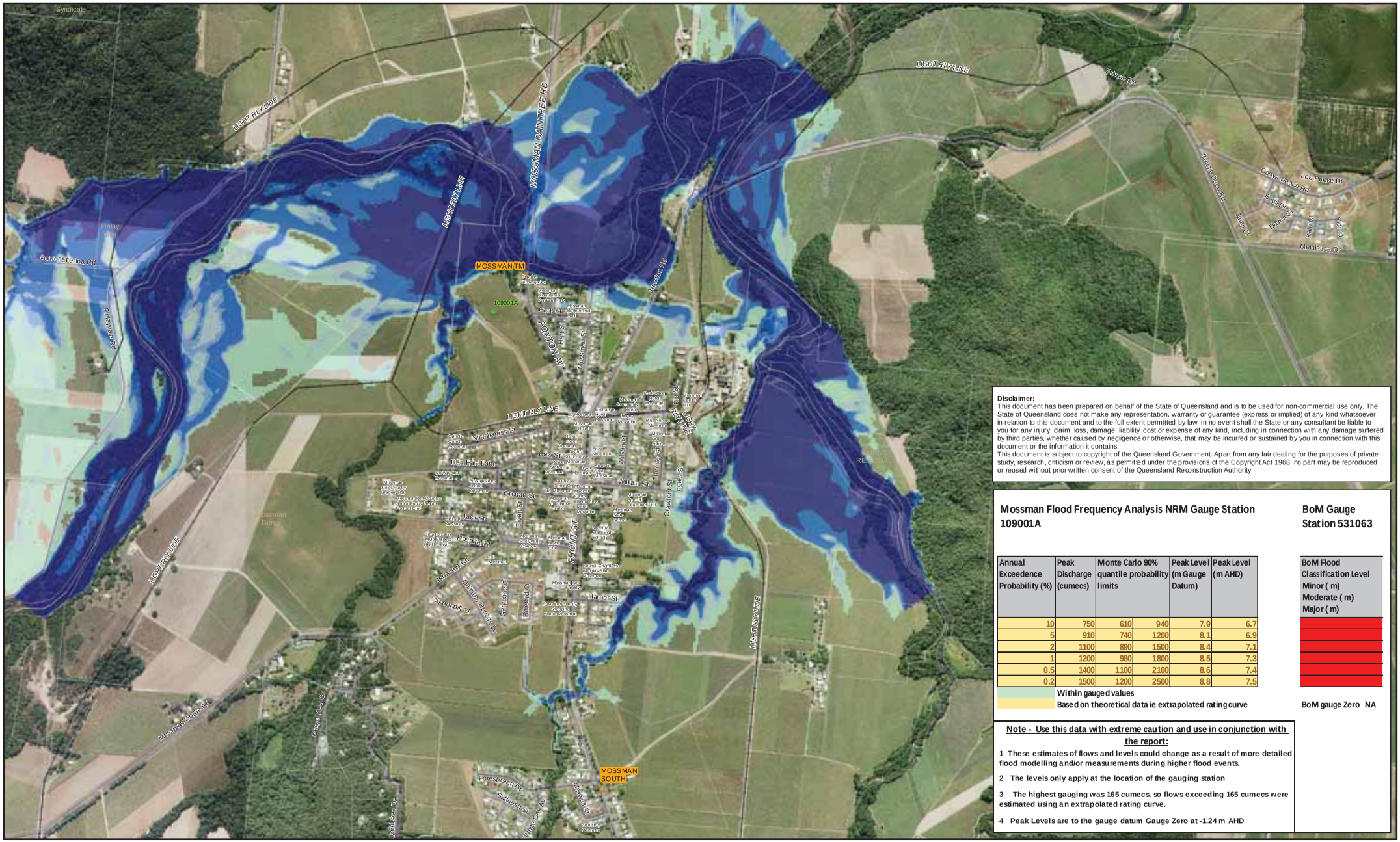
0 0.25 0.5
Kilometres

Scale at A2 - 1:10,000

Mossman Flood Investigation
Flood Hazard Map
Flood Component
1% AEP Event
6.57m AHD
at BoM Gauge 531063

15/04/2013

04



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Mossman Flood Frequency Analysis NRM Gauge Station 109001A

Annual Exceedence Probability (%)	Peak Discharge (cumecs)	Monte Carlo 90% quantile probability limits		Peak Level (m Gauge Datum)	Peak Level (m AHD)
10	750	610	940	7.9	6.7
5	910	740	1200	8.1	6.9
2	1100	890	1500	8.4	7.1
1	1200	980	1800	8.5	7.3
0.5	1400	1100	2100	8.6	7.4
0.2	1500	1200	2500	8.8	7.5

Within gauged values
Based on theoretical data ie extrapolated rating curve

BoM Gauge Station 531063

BoM Flood Classification Level
Minor (m)
Moderate (m)
Major (m)

BoM gauge Zero NA

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Local Authority: Cairns Regional
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0 0.25 0.5
Kilometres

Scale at A2 - 1:10,000

Mossman Flood Investigation
Flood Hazard Map
Flood Component
0.2% AEP Event
6.89m AHD
at BoM Gauge 531063

15/04/2013

04