



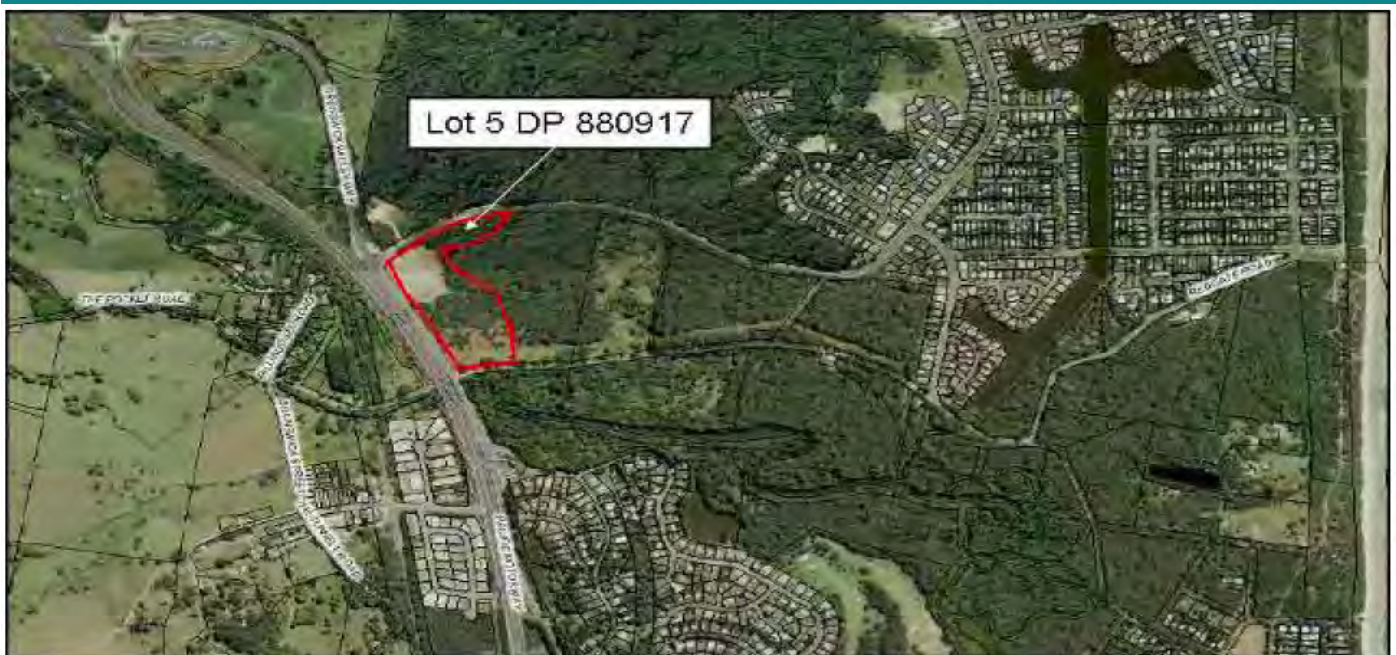
Byron Northern Sports Fields Review

Lot 5 DP 880917

Preliminary Assessment Report (First Draft)

December 2013

(Commercial in Confidence)



*Completed by SGL Consulting Group Australia Pty Ltd
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TABLE OF CONTENTS

1	PROJECT OVERVIEW	1
1.1	BACKGROUND	1
1.2	SHARA BOULEVARD REVIEW.....	1
1.3	SCOPE OF THIS REPORT.....	2
1.4	PROJECT AREA DEMOGRAPHICS.....	2
2	SHARA BOULEVARD SITE REVIEW	5
2.1	INTRODUCTION	5
2.2	SITE OVERVIEW AND CONTEXT	5
2.3	SITE LOCATION IN CONTEXT TO LOCAL TOWNSHIPS AND POPULATION AREAS	7
2.4	LAND AREA.....	9
2.5	CONTOURS/SITE LEVELS AND GEOTECHNICAL	10
2.6	FLOOD ASSESSMENT	11
2.6.1	Existing Site Flood Behaviour.....	11
2.7	LAND CONTAMINATION.....	12
2.8	ECOLOGICAL ASSESSMENT.....	13
2.9	STATUTORY AND COMPLIANCE	14
2.10	SITE SERVICES	16
3	PRELIMINARY SITE ASSESSMENT AND SUITABILITY	17
3.1	INTRODUCTION	17
3.2	INDUSTRY TRENDS AND KEY SITE SUCCESS FACTORS.....	17
3.3	PROPOSED SITE DEVELOPMENT CONSIDERATIONS AND LAYOUTS	17
3.3.1	Site Layout Trial One	18
3.3.2	Site Layout Trial Two	19
3.3.3	Flood Impacts of Trail Layouts	20
3.4	POTENTIAL MULTI-USE SPORTS FIELD LAYOUTS AND SITE CAPACITY	20
3.4.1	Potential Playing Field Layouts.....	20
3.5	SUITABILITY OF SITE AS A POTENTIAL NORTHERN SPORTS FIELD COMPLEX.....	23

APPENDIX

APPENDIX ONE: LAYOUT OPTIONS FLOOD IMPACTS

1 PROJECT OVERVIEW

1.1 BACKGROUND

At the Ordinary Meeting of Council held on 29 August 2013, consideration was given to a report regarding the proposed development of land at Billinudgel for sports fields.

It was resolved as follows:

1. That Council appoint recreation consultants to undertake an evaluation of Lot 3 DP1019171, Lot 423 DP755687 and Lot 5 DP 880917, the North Byron Parklands site and Waterlily Park as possible sports field sites (to include community and sporting group consultation) and report the outcome back to Council within 3 months and preceded by a workshop with a firm recommendation based upon the advice received.
2. That this report is to compare possible costs, site constraints (including consideration of field levels that minimise import of fill) and level of provision of sports fields and courts and is to consider using more than one site to satisfy the total sporting needs of the area.
3. That Council establish a Shire wide sports association and user group to consider the needs and opportunities for the enhancement of sporting participation across the shire and that this group meets at least twice per year.

Since this meeting staff had progressed the engagement of a consultant company and SGL Consulting Group Australia Pty Ltd were appointed and in late November they had visited each site and started collecting detailed information and reports on each of the nominated sites.

1.2 SHARA BOULEVARD REVIEW

However, also during this time Lot 5 DP 880917 (referred to in the report now on as Shara Boulevard) has been to auction and was passed in. Council Officers held discussions with the Real Estate Agent acting for the receivers associated with this land.

The initial value on the sale of the land, as reported to Council previously, was \$1.95 million, with marketing as an approved site for the development of a service station.

This is no longer the case. The auction held on Thursday, 17 October 2013 had a reserve in the range of \$300,000 to \$400,000. The property was passed in at auction, although there were offers made which were not accepted.

The acting agent has advised that his clients may consider offers of \$350,000+ and based on this it was agreed by Council at its Ordinary Meeting dated 31st of October 2013 to discuss the matter further in a confidential session due to the possible compromise of the commercial position of the agent and vendor.

Following this discussion it was agreed that a detailed review of this site would be brought forward so a preliminary assessment report could be completed and reported to Council by mid to late December 2013.



The Shara Boulevard site review was agreed to include:

- General suitability of the site for sports fields
- Positioning, design and layout of initial sports field providing for multi code use.
- Potential for/feasibility of developing a second field at the site and providing a concept for its orientation/location/size etc.
- Extent and location of amenities (located so as to be suitable to serve two fields when/if second field is brought on-line).
- Need for/location of kiosk, scoreboards, coaches' boxes, player dugouts etc.
- Lighting requirements.
- Signage (within the facility).
- Spectator seating (under cover?)
- Car-parking (Likely location, number of vehicles provided for etc.).

To assist with the site review an independent flood study of the site and surrounds was commissioned as well as an Ecological Site Assessment.

1.3 SCOPE OF THIS REPORT

This report has been prepared as a preliminary site review recognizing the tight timeframe available to complete detailed reviews and studies.

To assist this process an updated flood study and ecological review were commissioned by Byron Shire Council to assist in looking at flooding issues and possible development works to house multiple fields and minimize down stream impact.

This preliminary report has had access to the final flood study report and recommendations and at time of writing the Ecological Study was completed to a draft preliminary stage.

This report is presented in three sections being:

- Section One: Background
- Section Two: Site Review
- Section Three: Preliminary Site Assessment and Suitability

1.4 PROJECT AREA DEMOGRAPHICS

Byron Shire is a local government area located in the Northern Rivers region of New South Wales, Australia. The shire is located adjacent to the Tasman Sea about 50 kilometres south of the Queensland border.

The shire, administered from the town of Mullumbimby, covers an area of 566.7 square kilometres, and has existed as a local government entity since 1906.

The population of Byron Shire at the date of the 2011 census was 29,208 (compared to 28,767 in 2006). The median age was 42 (compared to 41 in 2006).

Council's website indicates The Byron Shire community is a diverse mix of people, with each of the towns and rural villages having its own distinctiveness, with a mix of cultural values, embracing both traditional and alternative lifestyles and philosophies.

The Byron Shire Council area covers the following areas listed in the map below.





The northern parts of the Byron Shire include the main population areas and associated populations (2011 ABS Census population listed in brackets) of:

- South Golden Beach (749 people)
- Ocean Shores (4,870 people)
- Billinudgel (282 people)
- New Brighton (293 people)
- Brunswick Heads (1,636 people)

The population data indicates more than 7,830 people were estimated to live in the main townships of the northern area of Byron Shire.

With surrounding area population this area is expected to include more than 9,000 people, which represents approximately 30% of the total shire population.

2 SHARA BOULEVARD SITE REVIEW

2.1 INTRODUCTION

This section of the report provides an overview of the lot 5 Shara Boulevard site under review and covers:

- Area Context
- Site Location
- Land Area
- Contours/Site Levels and Geotechnical
- Flood Assessment
- Land Contamination
- Ecological Assessment
- Statutory and Compliance
- Other Relevant Information

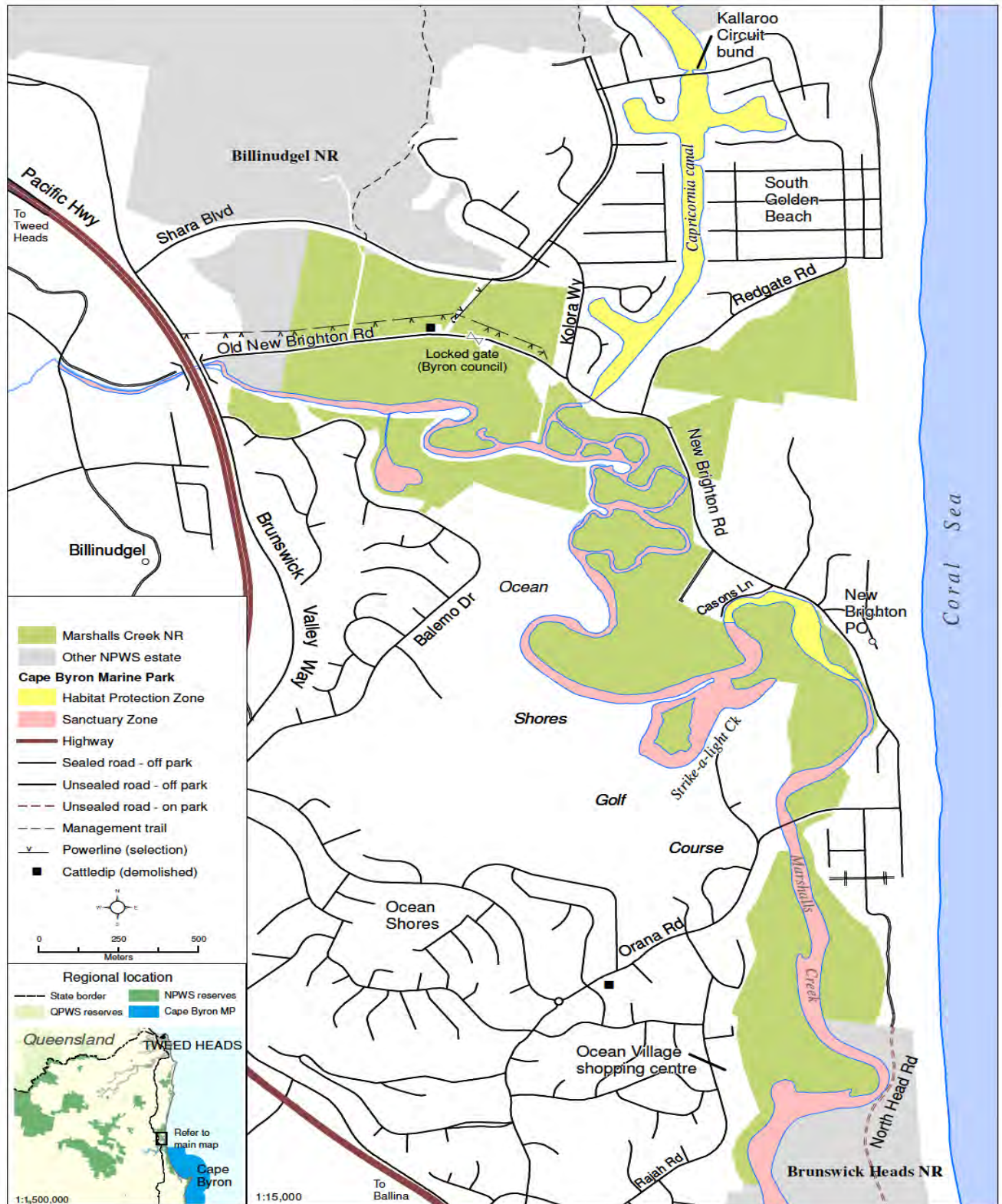
2.2 SITE OVERVIEW AND CONTEXT

Lot 5 Shara Boulevard is located in Ocean Shores and covers an approximate land area of 7.051 hectares (approximate area listed on Auction brochure). The site is located on the southern side of Shara Boulevard and bounded to west by Brunswick Valley Way and the Pacific Highway.

The site adjoins the Marshall Creek Nature Reserve to the south (with the former Old New Brighton Road now closed and reverted to cycle/pedestrian trail) and to the east adjoining the Billinudgel Nature Reserve. The following aerial photograph provides a site area layout based on the yellow outline as well as context to the residential area of Ocean Shores, coastal areas and the Pacific Highway.



The surrounding land areas of the site are significant as to the south is the Marshall Creek Nature Reserve and to the North and East the Billinudgel Nature Reserve. The surrounding land areas are highlighted in the following area layout diagram.



Note: Diagram from Marshall Creek Nature Reserve Plan of Management February 2011.



The 2011 Plan of Management Report indicates *“the Marshalls Creek Nature Reserve is located approximately 45 kilometres south of Tweed Heads and 20 kilometres north of Byron Bay on the far north coast of New South Wales (NSW). The reserve abuts the coastal townships of Ocean Shores, New Brighton and South Golden Beach, which have a combined population of approximately 6000 people (ABS 2011).*

The original area of the reserve, comprising 112 hectares of high conservation value vacant Crown land, was gazetted in 1999 as part of the Upper North East NSW Regional Forestry agreement process.

A Compensatory Habitat Package was negotiated between the Department of Environment and Climate Change and the Roads and Traffic Authority (RTA) for impacts associated with the Brunswick Heads to Yelgun Pacific Highway upgrade.

Through this process a further 40 hectares of freehold land between Shara Boulevard and Balemo Drive was added to the reserve in 2007 and 2008. The total area of the reserve is currently 152 hectares.

The reserve adjoins Billinudgel Nature Reserve to the north and Brunswick Heads Nature Reserve to the south. These reserves and other coastal reserves in the nearby area including Tweed Estuary, Ukerebagh, Cudgen, Wooyung and Tyagarah Nature Reserves protect significant coastal vegetation, wildlife habitat and corridors.

The reserve features vegetation communities indicative of the extent and frequency of tidal flooding including mangroves, saltmarsh and Casuarina forest. The reserve also protects swamp forest communities, sclerophyll forest and rainforest.

The reserve lies within the biogeographical province known as the Macleay-McPherson Overlap Zone (Burbidge 1960 cited in NPWS 2000), which extends from the Queensland border to the Hunter Valley in NSW.

Being a transitional area subtropical and temperate species of flora and fauna coexist, and many species find their southern or northern distribution limits respectively within this zone (Lott and Duggin 1993).

The climate is coastal subtropical. Generally, almost 70% of the year's average rainfall of 1,650 millimetres falls from middle to late summer”.

2.3 SITE LOCATION IN CONTEXT TO LOCAL TOWNSHIPS AND POPULATION AREAS

The site is well positioned centrally to service a number of local townships and population areas. This includes:

- To the east South Golden Beach and New Brighton,
- To the east/south east Ocean Shores
- To the south west Billinudgel
- To the south Brunswick Heads

The Shara Boulevard site can be directly accessed off Brunswick Valley Way as the main access feeder road and this is linked to close by on/off ramps to the Pacific Highway which to the north links to Tweed Heads/Coolangatta and to the South Byron Bay and Mullumbimby.

To the south off Brunswick Valley Way there is an underpass (Tunnel Road) linking Billinudgel to the southwest whilst further south this road links to Ocean Shores and Brunswick Heads.

The following aerial photograph highlights the main population townships and residential areas and main feeder roads in relation to lot 5 Shara Boulevard (site land area listed in light green) as well as its location to coastal areas.



Note: Light brown highlight indicates footpath or pedestrian/cycle trail links in area

The aerial photograph indicates the site is well accessed by main roads, shared paths for cyclists and pedestrians (light brown lines) as well as having high main road access and passive surveillance from passing traffic on the Brunswick Valley Way.

From a potential neighbourhood impact related to noise or congregation of people the site is remote from housing thus reducing the impact of events and activities on residential areas.

2.4 LAND AREA

The approximate land area of lot 5 Shara Boulevard is 7.051 hectares. The site dimensions indicate the western boundary adjoining Brunswick Valley Way is approximately 3600m long and the land area widens out at the southern boundary to approximately 1,400m wide.

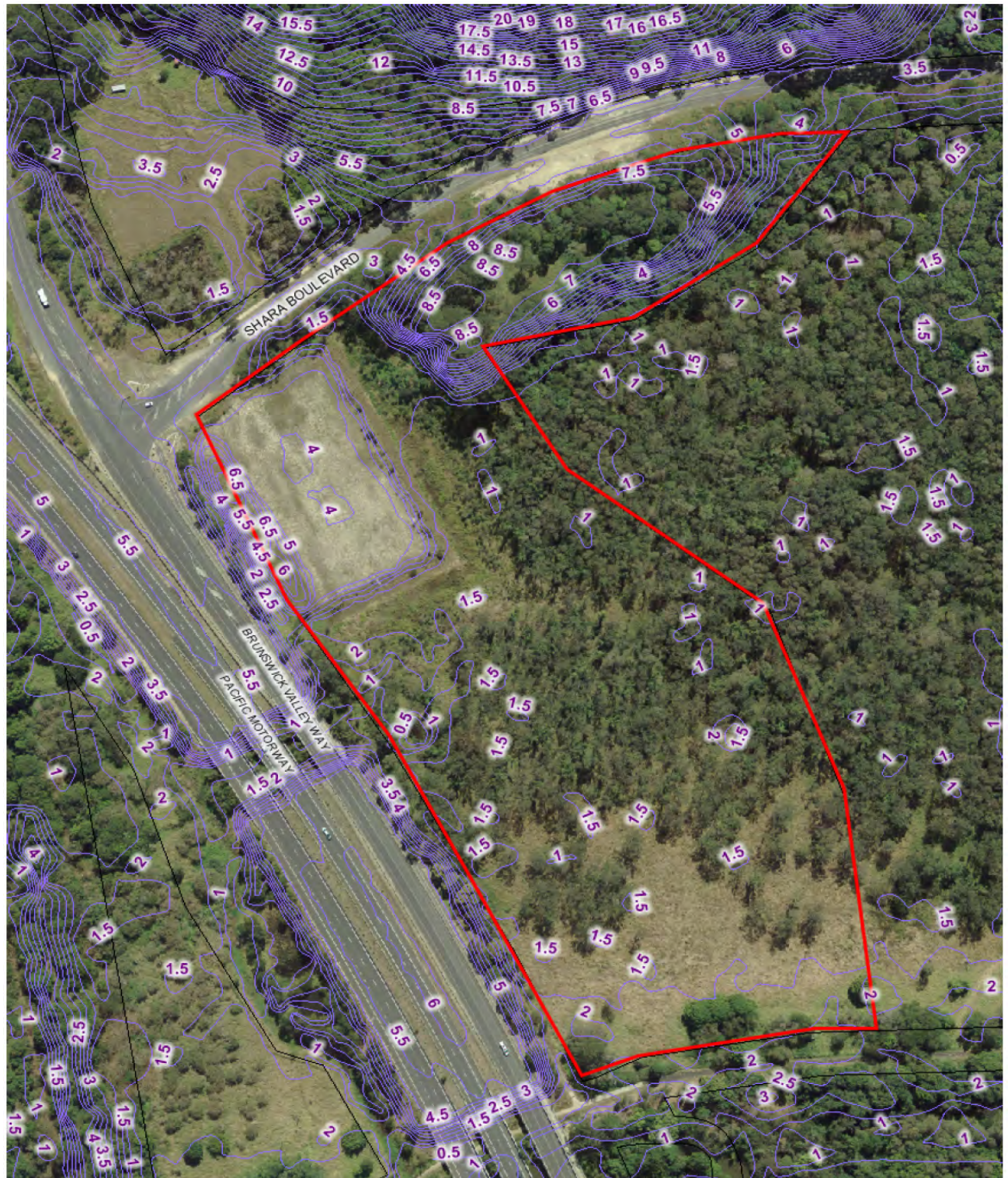
On the eastern site boundary the site width remains at approximately 1,400m wide heading back north for approximately 1,000m and then tapers back into a site width of approximately 1,300m wide. It then runs at this width north to the property Shara Boulevard boundary by a further 1,100m.

There is an adjoining area that runs adjacent to Shara Boulevard for approximately 200m that is approximately 50m wide at the western end and this tapers off at the eastern end after 200m. The following aerial photograph highlights the sites land area (bounded by the red line) relative to Brunswick Valley Way/Pacific Highway, Shara Boulevard and the closed Old New Brighton Road (now shared cycle and pedestrian trail).



2.5 CONTOURS/SITE LEVELS AND GEOTECHNICAL

The following aerial photograph shows the sites topography and contours.



The contour site levels indicate a significant mix of ground levels, which have been altered by fill in some parts of the site for the proposed service station.



Review of available reports indicates the site has an existing fill slab, which is judged to be well above the 100-year flood levels for the area. Site fill is estimated to cover 0.7 hectares of the site in the north west corner of the site.

Previous council reviews of the site indicate that the filling that exists in this area of the site initially included surcharge fill above finished levels. The reports indicate the surcharge has been removed and a certificate to this effect was provided by the landowners consulting engineers when previous applications were made for its use.

The contours plan indicates the fill pad is located at around 3.5m to 4m. The small tapered area to the east quickly increases to 8.5m to the east of the fill pad and then gradually inclines back to 7.5m at roadway and fluctuates between 4m and 6m on the southern end of this taper.

The site to the south of the fill pad drops away quickly to a consistent level of 1m to 1.5m through to the southern site boundary.

Previous Council reports also note a geotechnical report exists for the site noting that its main purpose was for the development of the service station. However, there is information within this report that would inform the design of the sports field surfacing and drainage requirements.

2.6 FLOOD ASSESSMENT

BMT WBM Pty Ltd a consultancy company specialising in mechanical, maritime, water and environmental engineering and hydraulics was appointed in November 2013 to review the site and to use the TUFLOW model developed for the Tweed/Byron Coastal Creeks Study (BMT WBM 2010) to estimate the impact of a potential proposed development of two sports fields and associated infrastructure at the site.

A detailed Sports Field Flood Assessment Report was completed and SGL have reviewed this report and summarised key issues related to this projects preliminary review site assessment.

2.6.1 Existing Site Flood Behaviour

The BMT WBM report dated 18th of November 2013 indicated in relation to existing flood behaviour that the "The site lies on the Marshalls Creek floodplain, immediately down stream of a floodway through the Pacific Highway.

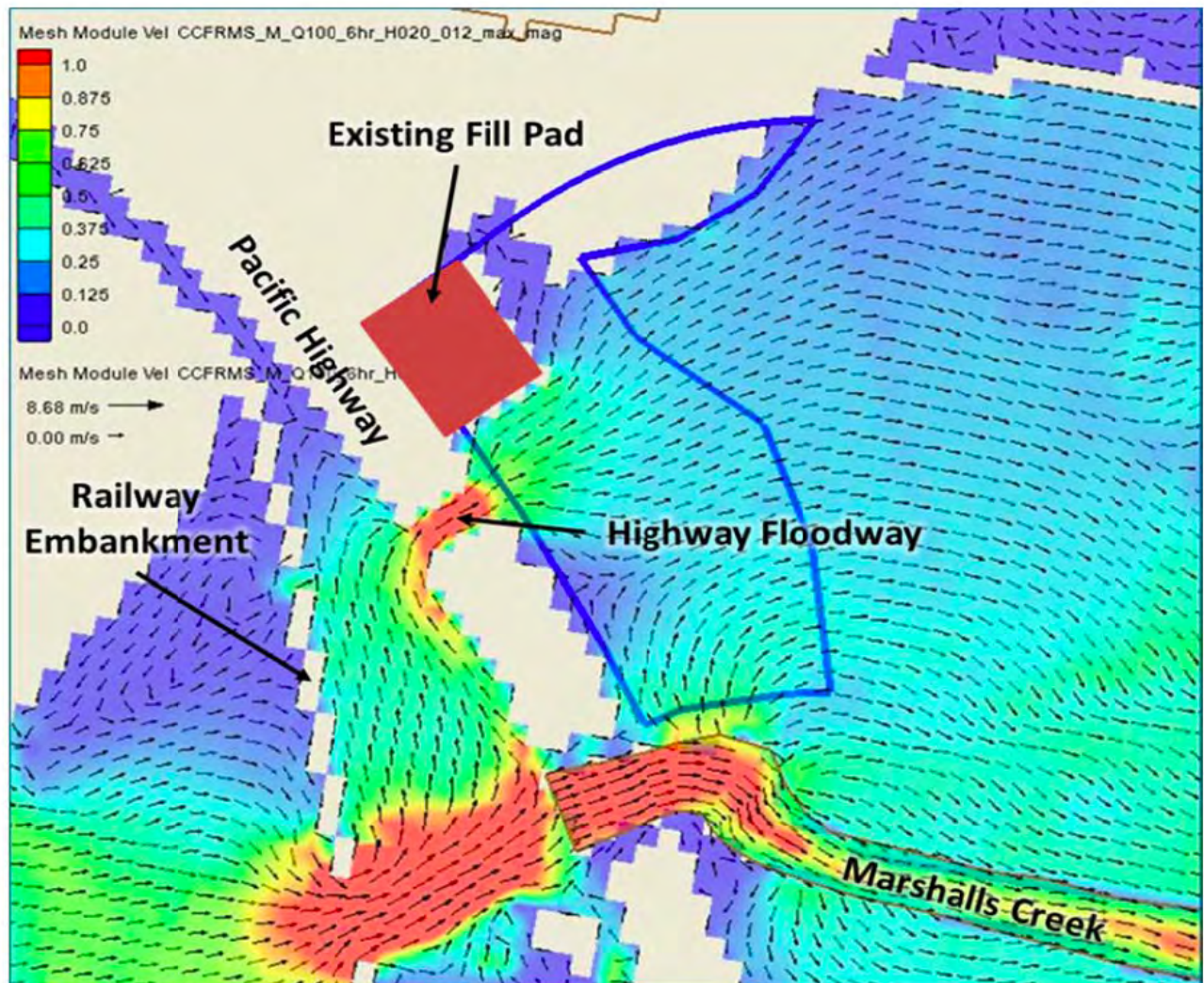
Floodwaters exiting this floodway generally continue in a uniform northeasterly trajectory Marshalls Creek is located near the southern boundary of the site, and high ground bounds the northern edge of the site.

There is a fill pad in the northwest corner of the lot. This fill pad is flood immune in the 100 year Annual Recurrence Interval (ARI) flood.

The flood behaviour across the northern portion of the site is mainly influenced by flow exiting the floodway under the highway. Upstream of the highway, flood flows are constrained by the disused railway embankment.

Floodwaters accelerate to around 1m/s through the 30m wide floodway and then decelerate to around 0.5m/s on exit from the floodway before entering the site.

The flood behaviour in the southern portion of the site is mainly influenced by a breakout from the left bank of the Marshall Creek downstream of the highway.



Note: Site flood behaviour graphic - BMT WBM November 2013.

2.7 LAND CONTAMINATION

Previous Council reports indicate the site is not identified in Council's contaminated lands register. The most recent section 149 certificate does not identify the land or part of the land is significantly contaminated.

The land is not subject to a Contaminated Land Management Act 1997 order at the date of the certificate (being 26/07/13).

The land is not subject to an ongoing maintenance order nor is it the subject of a site audit statement under the terms of the Contaminated Land Management Act 1997.

Previous Council reports indicate any development application for the purposes of a recreation area (sports fields) would require an assessment in accordance with the requirements of State Environmental Planning Policy 55 Contaminated Lands and Council's contaminated lands policy.

2.8 ECOLOGICAL ASSESSMENT

Previous research reviews indicated there was no detailed ecological assessment of the site available.

An Ecological Assessment Report was therefore commissioned by Council and has been completed to a Draft Preliminary Stage at time of writing of this report, which was completed by Planit Consulting Pty Ltd (December 2013).

The report contents and findings will require detailed assessment following completion of the report to a final stage level but it is noted that the preliminary report key findings include:

“The site has been broken into five 5 distinct vegetation communities incorporating eco-tone transitions, this vegetation mosaic occurrence creates various habitat opportunities for flora and fauna by diversity of influencing factors.

A total of 2.6 ha (33%) of the site has been filled in the northwestern portion and is highly disturbed by past earthworks. This portion and has therefore aligned itself with the development proposal to support recreational and community infrastructure.

However 3.14 ha (40%) of the site is classified as Endangered Ecological Community and 2.6 ha is E.Piliuaris which is known a primary Koala Habitat.

The site layout is critical to increase the ecological outcomes and subsequent planning approval process. The Storm water and site layout has been assessed and impact calculation presented to determine the most suitable site layout.

The Study has also provided a conceptual layout from an ecological perspective for consideration.

The site is located on the fringe of a larger intact habitat corridor, which includes the national park, this peripheral location reduces the impact on the bioregional corridor.

The 7-part test has been conducted and considerations have been made relating to 21 specific threatened species that are likely to or may utilise the site. (Refer to section 7 of the report).

The result demonstrates that the current proposed actions to develop multiple sports fields on the site will influence threatening process but are highly unlikely to increase extinction pressures on any local population of endangered ecological community.

Habitat potentials for threatened plant species occurs in the far northeastern corner of the site. The proposal will be required to support threaten species recovery programs and assist in achieving a net biodiversity gain. On this matter the proposal will be strengthened by specific restoration ecology principle being applied to the subject site, including targeted habitat functions for specific threatened species

The removal of the EEC (2.5 ha) is likely to be subject to offset constraints. This will include acquisition of property with similar and degraded characteristics suitable to conserve and restore Swamp Sclerophyll Forest. This is usually subject to flooding, is under 50 year flood levels and therefore is usually not prime developable land, therefore reducing acquisition costs.



This may be influenced by a 1:10 offset ratio, but with strong investment on site restoration it may be negotiated to 1:5 and still meet the intent of legislation.

The results of the impact assessment conclude that trial 1 site layout is the preferred option when considering approval pathways and off set costs for environmental planning legislation"

The impact assessment of the development layouts from the flood study (layouts 1 and 2) indicates the key environmental considerations are:

- *The site contains 3.14 hectares of Endangered Ecological Community*
- *The site contains 1.27 + 3.14 (4.41) hectares of Primary Koala Habitat*
- *The site contains isolated old growth tree specimens*
- *The site is likely to provide habitat for specific threatened fauna species*
- *The site is directly connected to a national park*
- *The subject site is mapped with various environmental overlays described by the local government planning scheme as:*
 - *Wildlife Corridor*
 - *Ecological Wetland*
 - *Adjacent a National Park*
 - *Adjacent Key Fish Habitat Creek System*
 - *Habitat Zone*
 - *High Conservation Value*
 - *Primary Koala Habitat*
 - *Threatened Habitat Area*

2.9 STATUTORY AND COMPLIANCE

A review of planning documents indicates the land is currently zoned:

- Zone No 1 (a)—(General Rural Zone)
- Zone No 7 (k)—(Habitat Zone)
- Zone No 5 (a)—(Special Uses Zone)

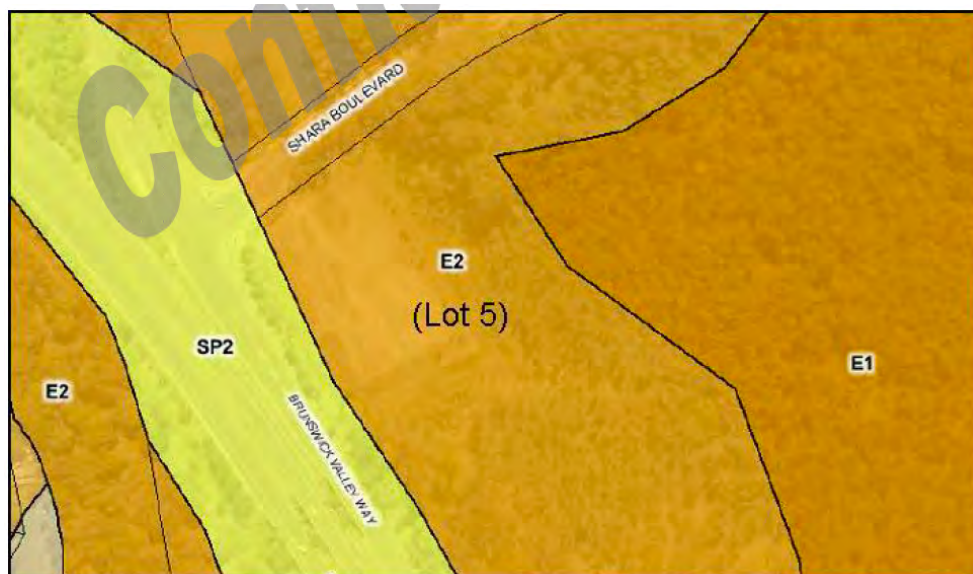
The aerial photograph on the next page shows the locations of the planning zone boundaries.



The review also indicates the development for the purpose of sports fields (recreation area) is permissible with consent in the 1(a) Zone.

Development for the purposes of sports fields (recreation area) is prohibited in the Zone No 7 (k)—(Habitat Zone). Development for the purposes of sports fields (recreation area) is permissible with consent in the Zone No 5 (a) - (Special Uses Zone), as this use would fall within the category of “any other public purpose”.

Under the current LEP the area available for development of sports fields appears to be possibly constrained. All of the site would need to be zones E2 under the draft LEP as recreation areas are a permissible use within zone E2 as listed in the proposed LEP Zone Boundaries layout Plan on the next page.





2.10 SITE SERVICES

Detailed site service reviews will need to be completed once scope and capacity of development is confirmed but initial investigations indicates all required services are located on the northern side of Shara Boulevard or off Brunswick Valley Way including:

- Water
- Sewerage
- Power
- Telecommunications

3 PRELIMINARY SITE ASSESSMENT AND SUITABILITY

3.1 INTRODUCTION

This section of the report looks at the opportunity and suitability of developing a range of multi-use playing fields (sports grounds) and support infrastructure on the review site. It covers:

- Industry Trends and Key Success Factors
- Playing Field and Sports Reserve Area Requirements
- Layout Options
- Key Site Assessment
- Key Study Findings

3.2 INDUSTRY TRENDS AND KEY SITE SUCCESS FACTORS

Current industry trends for the development of outdoor playing fields and sports grounds support any new greenfield development site should allow for as a minimum 2 multi-use playing fields and associated infrastructure including:

- Amenities,
- Change facilities,
- Car parking,
- Open space and adequate buffer zones for safety and neighbourhood impacts.
- Opportunities for other site development including community play spaces, hard courts and picnic and park furniture.
- Linkages to existing or future trails (cycling and pedestrian) and access.
- Easy access to adequate services

These trends have been developed as key success site selection criteria as the high cost of such infrastructure is best met where sites are developed with multiple playing fields and therefore more users and user capacity.

We have used these factors to assist in assessing the site for future use as an outdoor sporting facility.

3.3 PROPOSED SITE DEVELOPMENT CONSIDERATIONS AND LAYOUTS

A range of playing field design parameters, were nominated by Council Officers, to enable preliminary layout considerations to be progressed.

These were also used for the flood study so a number of cut and fill and layout options could be further considered. The key design considerations included:

- Two sports field of 130m x 90m required to be tested in two locations on site.
- Sports field levels should be set at around the 5 year ARI flood level;
- A road is required for access to these fields. This road can be at a lower level than the sports field, as long as they are not intended to be used during a flood – the flood immunity requirement is to facilitate/expedite use of the fields after a flood;
- Batter slopes of 1m in 4m should be used;

- The fill material will be sourced from the site. Therefore, a cut/fill balance should be undertaken;
- Fill material can be obtained from lowering of the existing fill pad and high ground within the site;
- The proposed development should not increase peak flood levels external to the site for the considered design flood events; and
- Consider the 5, 10, 20, 50 and 100 year ARI flood events
- Batter slopes of 1m in 4m should be used;
- The fill material will be sourced from the site. Therefore, a cut/fill balance should be undertaken;
- Fill material can be obtained from lowering of the existing fill pad and high ground within the site;
- The proposed development should not increase peak flood levels external to the site for the considered design flood events; and
- Consider the 5, 10, 20, 50 and 100 year ARI flood events.

Following development of these two layout options then alternative playing field layouts could be reviewed.

3.3.1 Site Layout Trial One

BMT WBM developed whereby the two playing fields were concentrated towards the northern portion of the site. The playing fields were offset from the highway to provide a floodway adjacent to the highway between the highway floodway and Marshalls Creek as laid out in the following diagram.



Note: Site Layout Trial 1 – BMT WBM November 2011

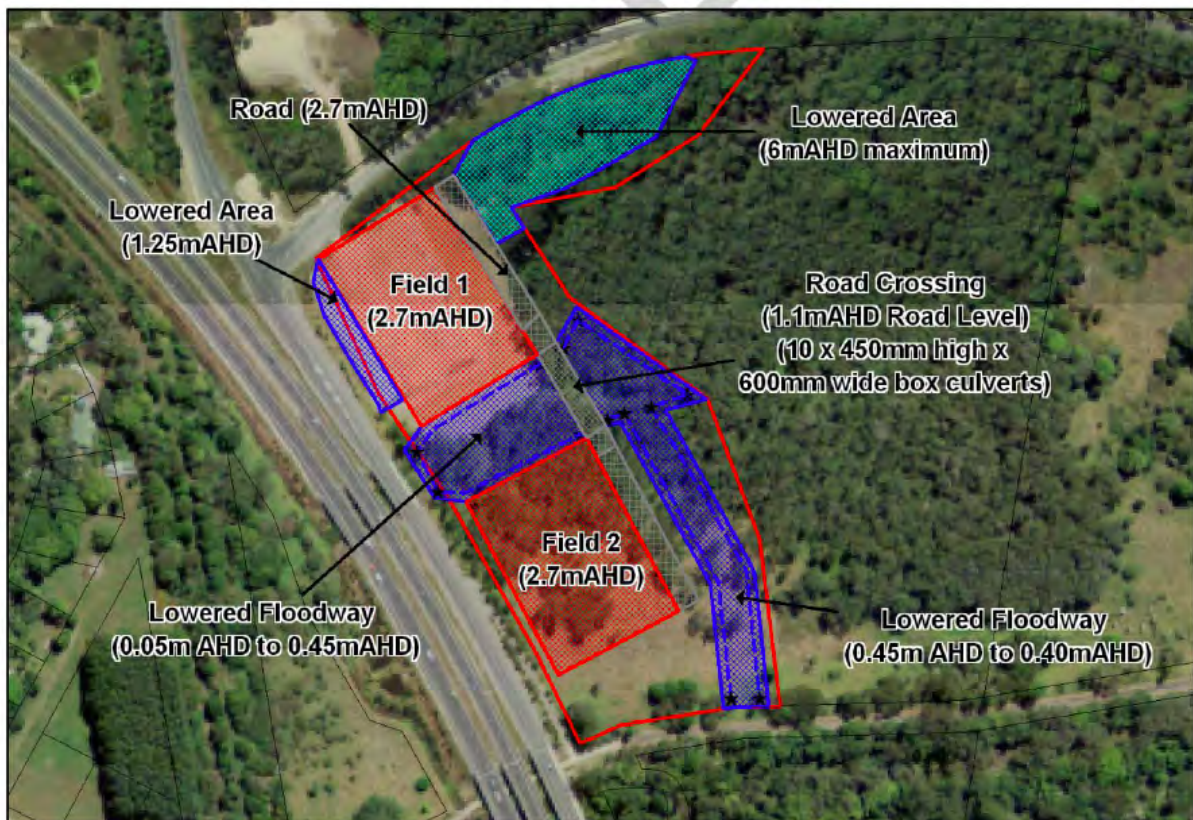
This layout was inserted into the flood model by BMT WBM and a 100-year ARI flood event simulated. The results showed that the proposed fill constrained the flow exiting the highway floodway, and that the lowered floodway was insufficient in mitigating this constraint.

The resultant increase in flood level upstream of the site, between the railway embankment and highway, was approximately 0.015m. There were no flood impacts downstream of the site.

3.3.2 Site Layout Trial Two

A second site layout was trialed in order to mitigate the 0.015m flood impact upstream of the site in trial 1.

This second layout aligned the two fields relatively close to the highway and on either side of the highway floodway as per the layout plan below.



Note: Site Layout Trial 2 – BMT WBM November 2011

The concept behind this alignment was to:

- Locate the fields in the 'shadow' of the highway embankment;
- To maintain a clear flow path for flows exiting the highway floodway; and
- Ensure the floodway through the site followed a similar alignment as the existing flood flow trajectory.

The layout produced an excess of cut material of 2,845m³. The results from this second trial as identified by BMT WBM are as follows:



- For the 100, 50 and 20-year ARI flood events the results indicate that there are negligible increases in flood levels external to the site (i.e. less than 0.01m change in flood level).
- For the 10 and 5 year ARI flood events marginal increases (of about 0.01m) in flood levels occur upstream of the development adjacent to the highway.

3.3.3 Flood Impacts of Trail Layouts

The likely flood impacts for 5, 10, 20, 50 and 100-year ARI flood impacts are listed in appendix one of this report and should be referenced when looking at the trial layouts.

3.4 POTENTIAL MULTI-USE SPORTS FIELD LAYOUTS AND SITE CAPACITY

At this stage of this sites preliminary assessment key stakeholder and sporting organisation interviews have not been completed to determine the priority sport field and code requirements.

To assist in site assessment we have looked at ensuring that the site has capacity for multi-use and have looked at development of both rectangular playing fields (Soccer, Rugby – Union/League) and oval playing fields (AFL, Cricket).

We have used Australian standard dimensions for each of the sports playing fields and then with assistance of Council Officers have overlayed these areas over the site aerial plans to test capacity to locate such facilities on site.

3.4.1 Potential Playing Field Layouts

The plans on the following pages have been developed by Council officers in association with SGL to show sporting dimension field layouts over aerial site photos.

These help indicate the likely areas needed to develop each playing space based on the minimum of two playing fields being developed (could be staged) to ensure the site had this capacity.

Each layout option indicates the playing field is located in its optimum recommended orientation and range of dimensions based on type of use. The layout plans indicate the likely land take up and impact on existing area as a starting point to reviewing best layout options.

Each site option has been developed based on the assumption that they would need to see facilities for change and amenities and user car parks plus site access roads being located in the higher areas of the site in the north east corner. This will provide a flood proof location as well as an opportunity to look down on playing fields.

It will also provide a safe entry and exit point to the site subject to new slip lanes and final traffic management design requirements.

The layout options developed include:

- Layout A: Rugby Union and AFL
- Layout B: Three Rectangular Fields suitable for Soccer.

- Layout C: Oval and Rectangular Field for Soccer/Rugby League.

These are listed as follows:

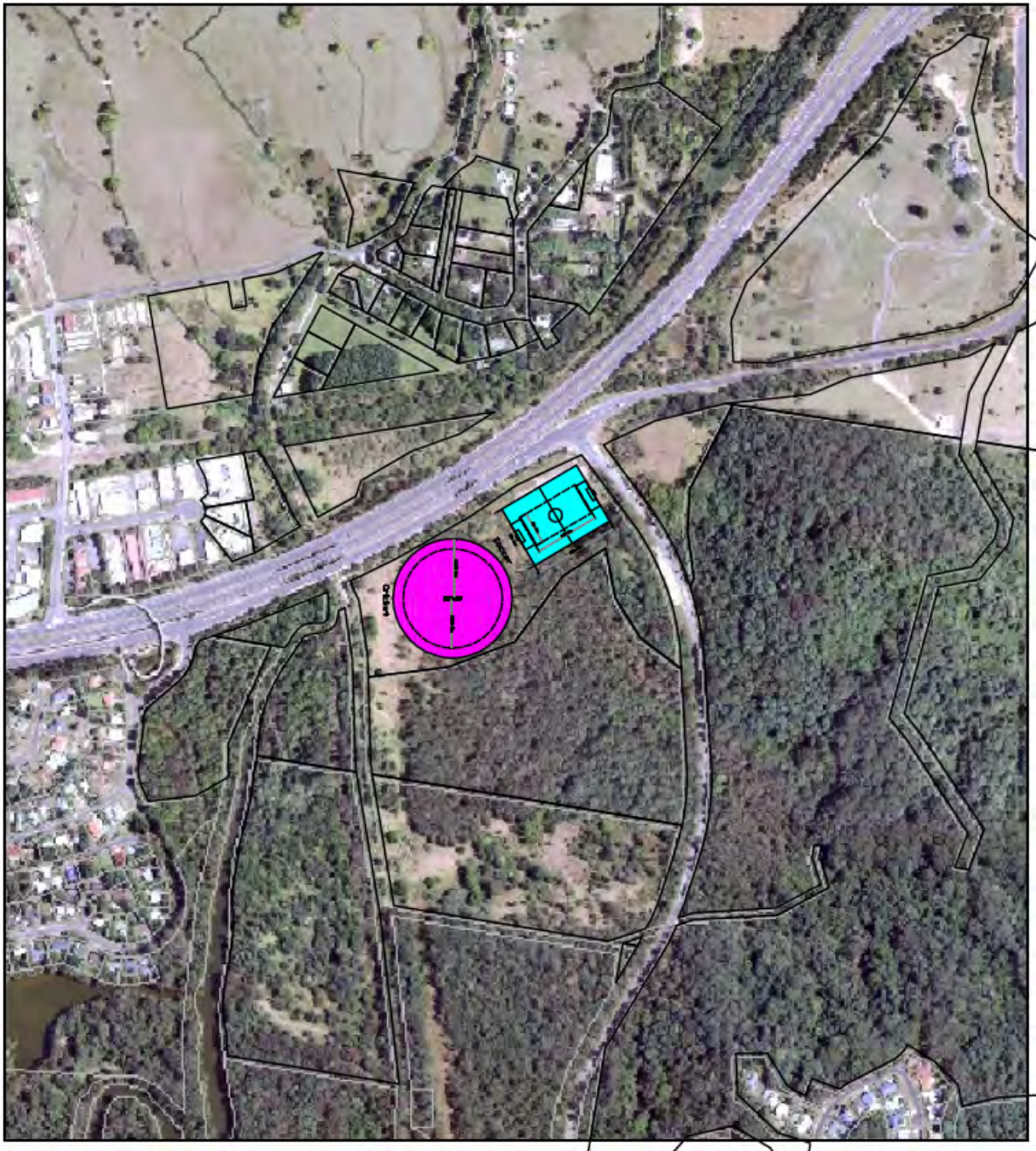
Layout A: Rugby Union and AFL



Layout B: Three Rectangular Fields suitable for Soccer



Layout C: Oval and Rectangular Field for Soccer/Rugby League



3.5 SUITABILITY OF SITE AS A POTENTIAL NORTHERN SPORTS FIELD COMPLEX

The preliminary site review indicates the Lot 5 Shara Boulevard site is well located and has suitable land area for multiple playing fields. The current fill slab will house one rectangular full size field and could also have its area levels modified to assist with flood mitigation and earth works for a second playing field.

As the preliminary layout plans indicate in association with flood reports and associated layout option plans that the site could be reshaped through cut and fill onsite to create a footplate for two playing fields.



The results of the impact assessment conclude that trial 1 site layout is the preferred option when considering approval pathways and off set costs for environmental planning legislation”

The Draft Preliminary Ecological Site Assessment Report (Planit Consulting Pty Ltd – December 2013) of the development layouts from the flood study (referenced as layouts 1 and 2) indicates the key environmental considerations are:

- *The site contains 3.14 hectares of Endangered Ecological Community*
- *The site contains 1.27 + 3.14 (4.41) hectares of Primary Koala Habitat*
- *The site contains isolated old growth tree specimens*
- *The site is likely to provide habitat for specific threatened fauna species*
- *The site is directly connected to a national park*
- *The subject site is mapped with various environmental overlays described by the local government planning scheme as:*
 - *Wildlife Corridor*
 - *Ecological Wetland*
 - *Adjacent a National Park*
 - *Adjacent Key Fish Habitat Creek System*
 - *Habitat Zone*
 - *High Conservation Value*
 - *Primary Koala Habitat*
 - *Threatened Habitat Area*

In reviewing the completed ecological assessment and multiple field layout plans raises the key issue is that can some vegetation removal occur in line with a staged compensatory plan for replacement plantings and fauna care.

We believe it is worth investigating this in greater detail as in our opinion the site is well positioned to service the three main population areas of Ocean Shores, New Brighton and Billinudgel and also has excellent road and trail access with also pedestrian and cycle networks already in place.

Preliminary reviews indicate site services are close by and this will minimise costs of development, as does the capacity to move onsite fill to assist with initial levelling works.

Based on these factors and in line with the study summary findings contained in this report the preliminary review indicates this would be an excellent site for future sports fields to service the northern sector of Byron Shire.

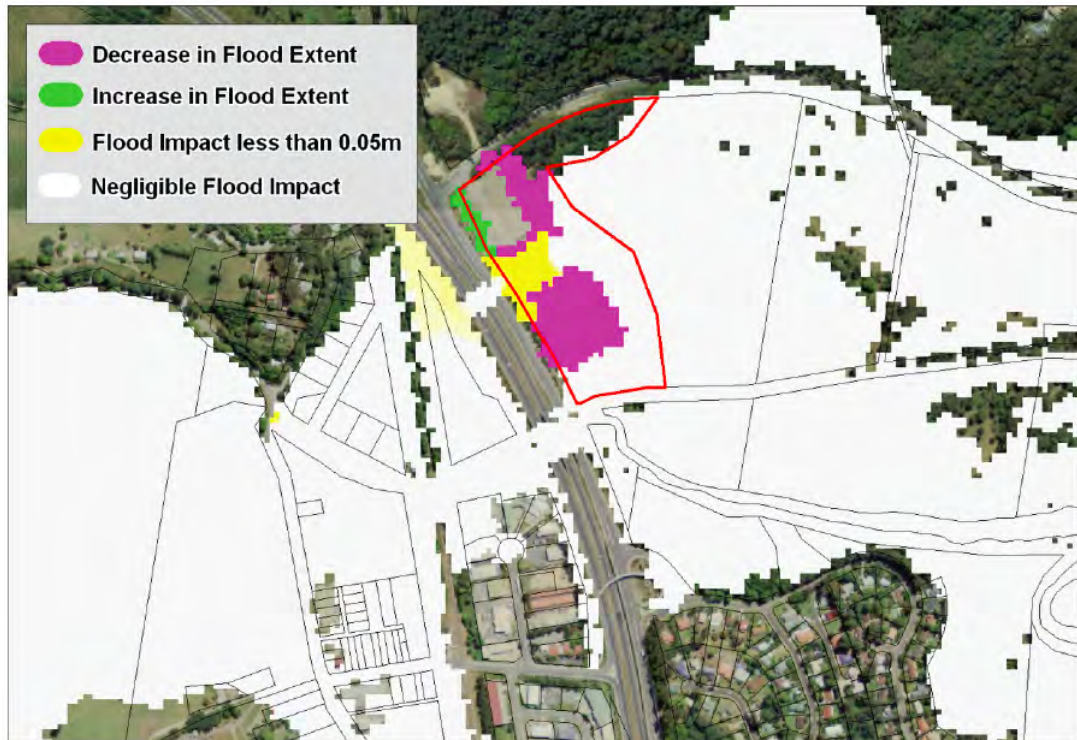
Further more detailed work and assessment on the ecological impacts and capacities for development and longer term staged compensatory plantings and fauna care is required to determine if the two playing field model can be achieved.

If this causes the site to limit development to only one playing field then the site becomes a restive development area.

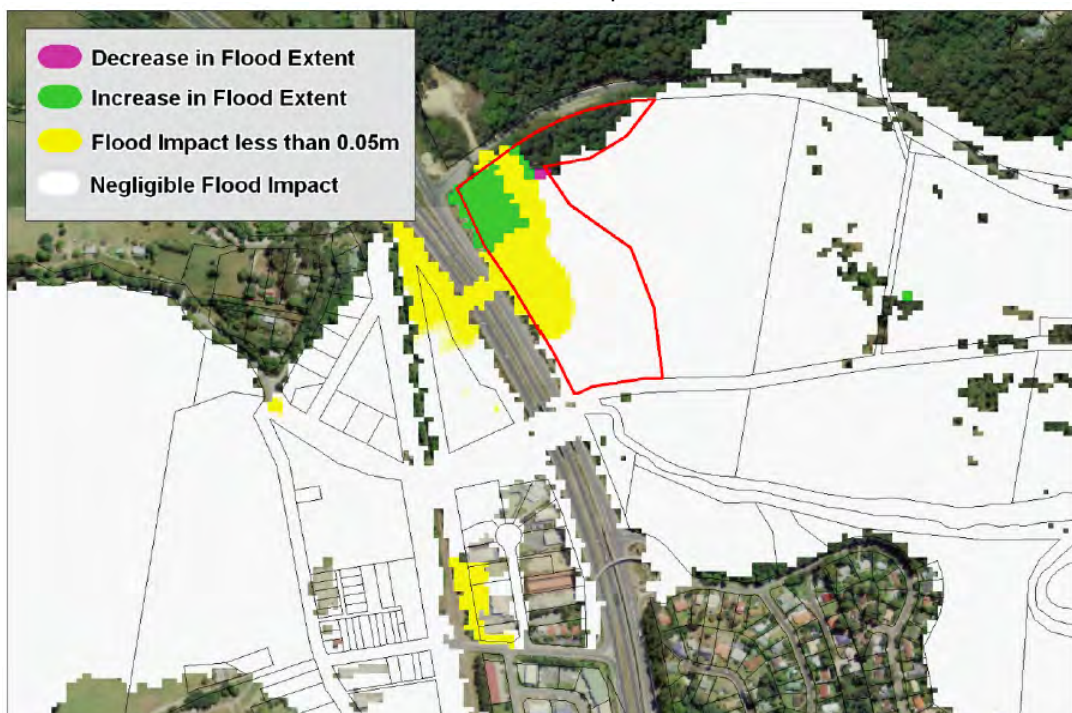
APPENDIX ONE: LAYOUT OPTIONS FLOOD IMPACTS

The following diagrams developed by BMT WBM highlight the likely flood impacts for 5, 10, 20, 50 and 100-year ARI flood impacts.

5 Year ARI Flood Impacts



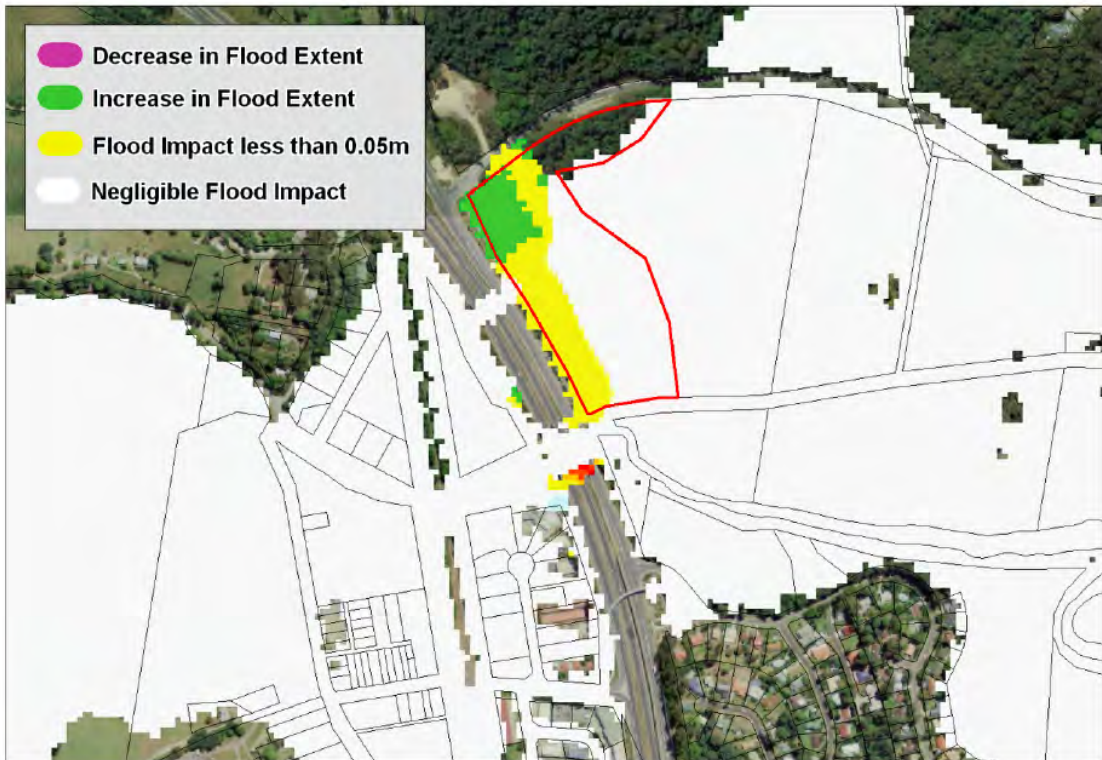
10 Year ARI Flood Impacts



20 Year ARI Flood Impacts



50 Year ARI Flood Impacts



100 Year ARI Flood Impacts

