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Iss	Description	Des	Drw	Date	Appd
E	Amend Lot Numbers	WF	WF	17.08.11	-
D	Amend Lot Layout	WF	WF	08.08.11	-
C	Amend Fill Layout	WF	WF	21.02.11	-
B	Lot Layout Amended	KGB	GC	30.11.10	-
A	For Discussion	KGB	GC	19.11.10	-

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CODLEA Pty Ltd

BAYSIDE BRUNSWICK
PROPOSED URBAN SUBDIVISION
BAYSIDE WAY, BRUNSWICK HEADS
LOT 1 DP 871039

PROPOSED SUBDIVISION LOT LAYOUT AND PROPOSED TREE RETENTION PLAN

Scale: 1:1500 at A1 CAD file: LM080082-DR21E.dwg
Datum: AHD CivilCAD file: LM080082 Ver 5.ccx

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Dwg. No. Issue
LM080082-DR21 **E**

7.1.1.3 Surface and Groundwater

Surface and groundwater characteristics of the site are addressed in detail in Appendix D - Surface and Groundwater Assessment. The following is a précis of the report in Appendix D.

Observations and/or potential impacts:

The site is most likely underlain by a continuous sand aquifer. During wet weather conditions, recharge of the aquifer in the grassed heath area in the west of the site would result in short term mounding of groundwater which gradually dispersed, creating flow to the east in the direction of the environmental area and Simpson Creek and to the west towards the drain. Due to the decrease in elevation in the east of the site, it is likely that the environmental area would receive discharging groundwater during these wet conditions. Saturation of the soil profile beneath the environmental area would most likely occur. During dry weather conditions, limited volumes of groundwater may still flow from the grassland area toward Simpson Creek. However, the extraction of groundwater by the trees in the environmental area will result in a decrease of the groundwater level beneath the eastern side of the site.

The dynamic nature of this shallow groundwater system will mean that the groundwater gradient (and hence flow velocity) will vary throughout the year depending on the rate of rainfall recharge.

The groundwater is naturally acidic (as occurs in Wallum ecosystems) and fresh, however, the ionic signature of the water reflected the influence of seawater on the system. The data indicated that acidic ground- and surface water discharging into the creek was buffered by the influx of tidal seawater. Conductivity results supported this finding.

Faecal coliforms (FC) were present in all surface water samples but only exceeded guidelines in Ck North in June and in Ck North and Ck South in October. Upstream or downstream influences were more likely causes of the FC contamination.

The parameters most likely to be impacted upon through the development include

- TSS, which could increase in surface water as a result of erosion and runoff after clearing of vegetation;
- Conductivity, which could decrease in Simpson Creek if storm water collected from the sealed surfaces of the site was discharged to the creek;
- Conductivity, which could increase in the groundwater if sealed surfaces in the recharge zone reduced the rate of freshwater recharge;
- Groundwater level and flow rate, which could decrease as a result of a reduction in recharge (potentially affecting the health of reliant vegetation in

the environmental area) or increase as a result of removal of some of the vegetation in the environmental area to allow for construction to proceed;
- Nutrients and pH, both of which could increase through the addition of fertilisers and soil conditioning agents to residents' gardens/lawns; and
- TPH, BTEX, pesticides and metals, all of which could increase as a result of road runoff and household activities.

The development has the potential to affect the groundwater and surface water, and in turn the local ecosystem including the SEPP 14 wetland habitat, of the site as described in Section 6.1 (Appendix D). As such,

Recommendations:

- Sediment control measures should be implemented during the construction phase to ensure TSS in Simpson Creek and its tributaries is not affected. Similarly, the design of the stormwater management system for the development should ensure that sediment loads and potential contaminants such as TPH, BTEX and metals are mitigated prior to release of stormwater to Simpson Creek.

- Imported topsoil could reduce the likelihood that residents would apply chemical treatments to increase soil pH. Residents should be educated on the prevailing soil conditions, the most ecologically sustainable methods for gardening in these conditions and any other sensitivities of the local ecosystem, including information on local endangered species such as the Wallum Froglet.

7.1.1.4 Flooding & Coastal Processes

Flooding and coastal processed of the site are addressed in detail in Appendix E - Flood and Coastal Advice Report. The following is based on the report at Appendix E.

Observations and/or Potential Impacts:

The subject site is affected by flooding during 100 year ARI design flood events, however the proposed filling for the development has been restricted to areas not inundated during the 100 year ARI event.

It is considered that the climate change allowance recommended by the Department of Environment, Climate Change and Water (based on 2100 planning horizon) provides an adequate degree of conservatism for the establishment of minimum fill levels.

The required filling associated with the proposed development has been shown to have no significant impact on peak flood levels outside of the property boundaries (refer to Fig. 20).

The necessary minimum residential floor height above the 1 in 100 flood level (i.e. "freeboard") will be achieved by the combined effect of reshaping of land within the subdivision, and housing construction requirements of the Building Code of Australia.

Recommendations:

- Fill will be required to provide an appropriate flood immunity to the urban areas of the proposed development accounting for specified freeboard requirements (500mm);
- It is recommended that fill levels are based on modelled 100 year ARI design peak flood levels that incorporate an appropriate allowance for potential climate change impacts.

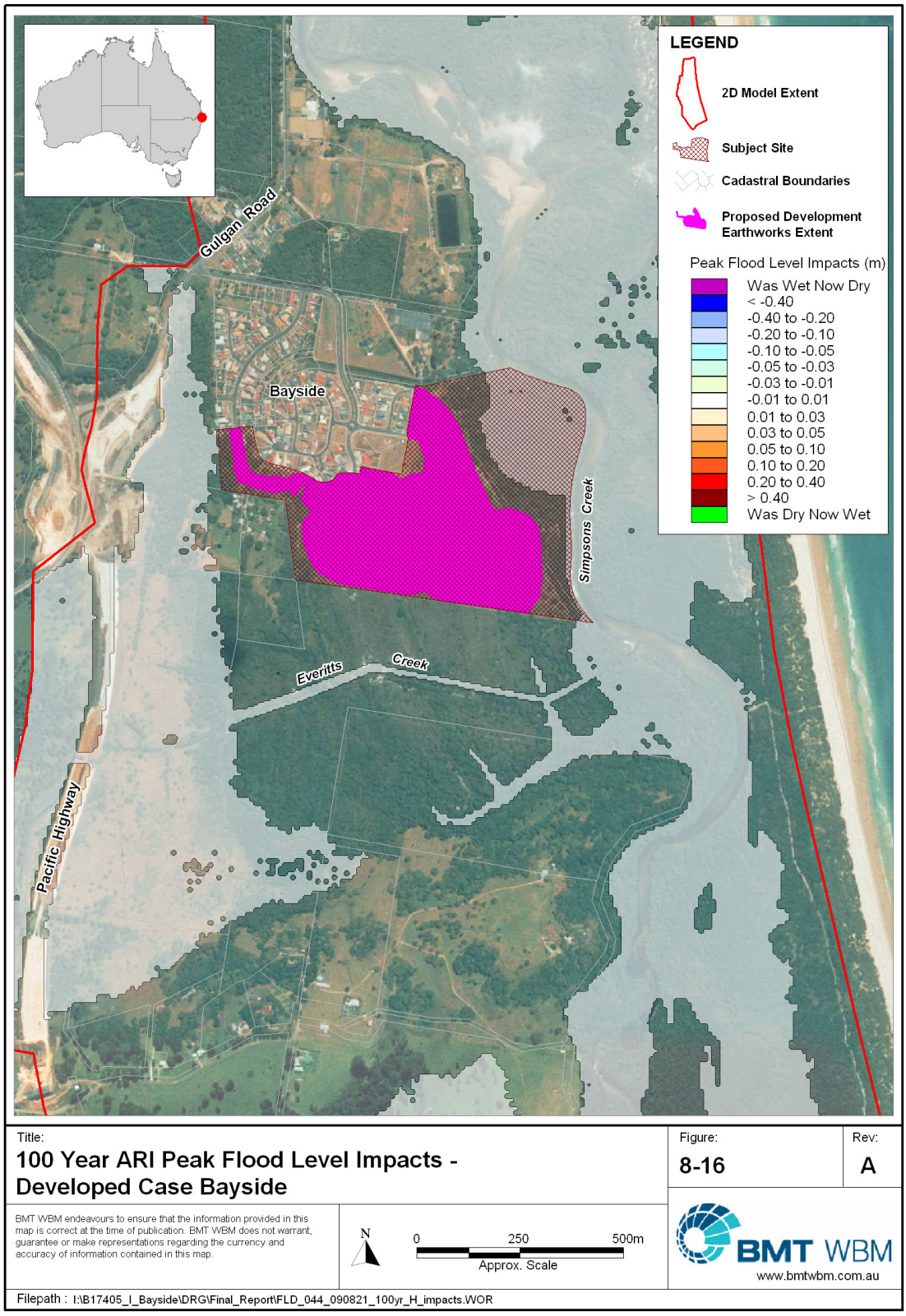


Figure 19. Flood Levels – Developed Case. Source: BMT WBM (Appendix E)

7.1.1.5 Cultural Heritage

Cultural heritage of the site is addressed in detail in Appendix F - Cultural Heritage Assessment. The following is a précis of the report at Appendix F.

Observations and/or Potential Impacts:

The land form considered by the consultants and Aboriginal Sites Officers to have the greatest potential to contain surface evidence of Aboriginal archaeological sites was Area D the cleared sand rise in the eastern sector of the proposed development (refer to Appendix F).

The assessment confirms that there are no issues in regard to items or places of historic significance within the Subject Lands to be addressed. However, as a contingency, the assessment provides a number of recommendations:

Recommendations:

- Recommendation 1: Post Clearing Survey – It is recommended that, in the area identified in figure A (in Appendix D), where activities are to be undertaken that have the potential to disturb or damage Aboriginal cultural heritage, a member of the Arakwal Aboriginal Corporation be engaged to conduct a survey of that area after initial clearing works have been undertaken ('Post Clearing Survey'). Should any items of cultural heritage significance be identified, the processes outlined in Recommendations 2, 3 and 4 should be followed.

- Recommendation 2: Aboriginal Human Remains
  It is recommended that if human remains are located at any stage during construction works within the Subject Lands, all works must halt in the immediate area to prevent any further impacts to the remains. The Site should be cordoned off and the remains themselves should be left untouched. The nearest police station, the Tweed Byron LALC, and the DECCW Regional Office, Coffs Harbour are to be notified as soon as possible. If the remains are found to be of Aboriginal origin and the police do not wish to investigate the Site for criminal activities, the Aboriginal community and the DECCW should be consulted as to how the remains should be dealt with. Work may only resume after agreement is reached between all notified parties, provided it is in accordance with all parties' statutory obligations.

It is also recommended that in all dealings with Aboriginal human remains, the proponent should use respectful language, bearing in mind that they are the remains of Aboriginal people rather than scientific specimens.

- Recommendation 3: Aboriginal Cultural Material
  It is recommended that if it is suspected that Aboriginal material has been uncovered as a result of development activities, including Post Clearing Surveys, within the Subject Lands:
  a) work in the surrounding area is to stop immediately;
  b) a temporary fence is to be erected around the site, with a buffer zone of at least 10 metres around the known edge of the site;
  c) (g) an appropriately qualified archaeological consultant is to be engaged to identify the material; and
  d) if the material is found to be of Aboriginal origin, the Aboriginal community is to be consulted in a manner as outlined in the DECCW guidelines: "*Aboriginal Cultural Heritage Consultation Requirements for Proponents* (2010)" (2005).

- Recommendation 4: Notifying the DECCW
  It is recommended that if Aboriginal cultural material is uncovered as a result of development activities within the Subject Lands, they are to be registered as Sites in the Aboriginal Heritage Information Management System (AHIMS) managed by the DECCW. Any management outcomes for the site will be included in the information provided to the AHIMS.

- Recommendation 5: Conservation Principles
  It is recommended that all effort must be taken to avoid any impacts on Aboriginal Cultural Heritage values at all stages during the development works. If impacts are unavoidable, mitigation measures should be negotiated between the Proponent and the Aboriginal Community.

7.1.1.6 Acid Sulfate Soils

Acid sulfate soils at the site are addressed in detail in Appendix G – Acid Sulfate Soils Assessment. The following is a précis of the report at Appendix G.

Observations and/or Potential Impacts

- No impact to Potential or Actual ASS sediments are expected as part of the proposed development.

Mitigation Measures:

- Acid Sulfate Soils were not identified within the proposed building envelope and therefore no mitigating measures are proposed.

Recommendations:

- In the event that excavations are required outside of the proposed building envelope or below 2.0m below surface level within the building envelope additional testing should be considered by the consent authority.

7.1.1.7 Bushfire Hazard

Bushfire issues at the site are addressed in detail in Appendix H – Bushfire Assessment. The following is a précis of the report at Appendix H.

Observations and/or Potential Impacts:

The site has a moderate to high bushfire risk due to the occurrence of significant stands of native vegetation to the east, and the occurrence of Swamp Forest communities in the west, and neighbouring unmanaged Heathland to the south. There is no threat of bushfire from the north, which is an established residential area, or from the south-west where two rural residential lots adjoin.

Mitigating measures:

Planning for Bushfire Protection (PBP) (RFS 2006) states that it must be demonstrated that the proposal satisfies the broad aim and objective of PBP, the specific objectives for the development type and the performance criteria for the various proposed Bushfire Protection Measures (BPMs).

The specific objectives for 'residential and rural residential subdivision development' are:

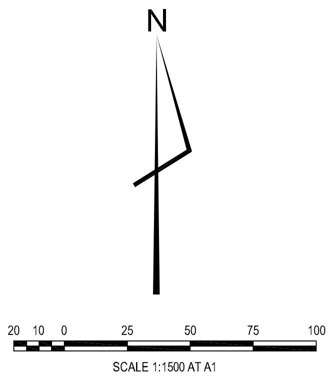
- *Minimise perimeters of the subdivision exposed to the bush fire hazard. hourglass shapes, which maximise perimeters and create bottlenecks, should be avoided;*
- *Minimise bushland corridors that permit the passage of bush fire;*
- *Provide for the siting of future dwellings away from ridge-tops and steep slopes - particularly up-slopes, within saddles and narrow ridge crests;*
- *Ensure that separation distances (APZ) between a bush fire hazard and future dwellings enable conformity with the deemed- to-satisfy requirements of the BCA. In a staged development, the APZ may be absorbed by future stages;*
- *Provide and locate, where the scale of development permits, open space and public recreation areas as accessible public refuge areas or buffers (APZs);*
- *Ensure the ongoing maintenance of asset protection zones;*
- *Provide clear and ready access from all properties to the public road system for residents and emergency services; and*
- *Ensure the provision of and adequate supply of water and other services to facilitate effective firefighting.*

Additionally PBP identifies the performance criteria and acceptable solutions for the various proposed Bushfire Protection Measures.

Recommendations:

The Bushfire Assessment on Appendix H demonstrates that the proposed development satisfies such requirements provided that the following is complied with and implemented:

- Provision of Asset Protection Zones prescribed on Table 5 (Appendix H) and shown on Fig. 20.
- Management of APZs in accordance with the requirements of 'Standards for Asset Protection Zones' (RFS 2008)
- Access road standards including:
    - All weather roads
    - Perimeter roads
    - Through roads, or cul-de-sac of less than 200 metres
- Landscaping and property maintenance principles



LEGEND

- Zoning Boundary
- Proposed Path
- Existing Path
- Proposed Boundary
- APZ Boundary
- Very High Conservation Significance - EEC
- Very High Conservation Significance
- High Conservation Significance
- Moderate - High Conservation Significance
- Moderate Conservation Significance

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Iss	Description	Des	Drw	Date	Appd
G	Amended Lot Numbers	KGB	WF	17.08.11	-
F	Amended Layout	KGB	WF	09.08.11	-
E	Amended Layout	KGB	GC	30.11.10	-
D	Amended Layout	KGB	GC	11.11.10	-
C	APZ Amended	KGB	GC	13.10.10	-
B	Layout Amended	KGB	GC	16.09.10	-
A	For Discussion	KGB	GC	07.09.10	-

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BAYSIDE BRUNSWICK
PROPOSED URBAN SUBDIVISION
BAYSIDE WAY, BRUNSWICK HEADS
LOT 1 DP 871039

PROPOSED SUBDIVISION LOT LAYOUT AND MODERATE TO VERY HIGH TREE CONSERVATION SIGNIFICANCE WITH AERIAL OVERLAY

Scale: 1:1500 at A1 CAD file: LM080082-DR10G.dwg
Datum: AHD CivilCAD file: LM080082 Ver 5.ccx

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Dwg. No. **LM080082-DR10** Issue **G**

7.1.1.8 Contaminated Land

Potential land contamination issues at the site are addressed in detail in Appendix J – Stage 1 Preliminary Contaminated Land Assessment. The following is a précis of the report at Appendix J.

Observations and/or Potential Impacts:

No evidence of soil contamination was uncovered and therefore no mitigating measures are proposed.

Recommendations:

- All illegally dumped rubbish be removed from the site and placed in an approved landfill facility;
- Should potentially contaminating or hazardous material be uncovered, at any time during the construction works, these materials are to be isolated and classified prior to removal to landfill under the supervision of a qualified contaminated materials consultant;
- Any hazardous materials are to be documented, with a report made available to the relevant consent authority.

7.1.1.9 Water Cycle Management

Water cycle management issues at the site are addressed in detail in Appendix L – Water Cycle Management Stormwater Concept report. The following is a précis of the report at Appendix L.

Observations and/or Potential Impacts:

Hard surfaces accumulate a range of pollutants during dry periods which may be released to receiving waters during rainfall events. As a result, there is potential for stormwater flow rates and pollutant volumes to be higher after development than beforehand. This may result in adverse impacts upon downstream water-bodies and ecosystems, unless appropriate mitigation measures are taken.

Mitigating Measures:

- Runoff control by encouraging infiltration, filtration trenches and spreaders at pipe outlets, a large bio-retention basin with treatment / filtration bed for the stormwater arriving via the piped road and IAD system as well as surface flows.

- Gross pollutants from the roads will be captured prior to entering the treatment systems with suitable gross pollutant traps (GPTs) located either at the end of line or at kerb inlet pits. The GPTs will minimise the amount of maintenance required for the bio retention swales and improve the overall quality of stormwater leaving the proposed development.
- Bio retention swales to promote the removal of particulate and soluble contaminants by passing stormwater through a filter medium. The detention depth of each swale is 300mm which negates the need for any public safety fences to be installed.
- The proposed SW concept identifies areas of poor drainage and will provide improvements to the drainage regime by re-instating and maintaining clear drainage paths. All common lines (IAD) will be protected by easements and a drainage reserve will be created for the bio-retention basin which will receive the majority of the piped flows.
- The addition of treatment areas and detention in the main drainage reserve as well as additional treatment beds in sensitive areas will ensure that stormwater quality targets will be met and controlled discharge of stormwater runoff will be achieved. This includes bio-filtration strips of 15x1m for individual lots adjacent to sensitive areas (eastern catchment) and where surface only discharge is possible (southern catchment).
- Sediment and Erosion Control:
    - provide "silt" fences, straw bale fences or soil berms downslope of all unprotected disturbed areas to capture any sediment passing from the site.
    - Land disturbance will be limited to that necessary for implementation of the plans of works.
    - Temporary sediment basins shall be sized and constructed for each stage of the proposed development. They will be monitored and maintained on a regular basis.
    - Temporary rehabilitation shall be undertaken on disturbed areas where works have ceased and soils are expected to remain exposed for more than one month. The contractor will be expected to maintain all water and soil management devices on a daily basis and ensure all vegetation shall be retained beyond limit of works.
    - Spoil from trenches is to be placed on the uphill side of the trench. The contractor must ensure unfinished pipework is capped with a diaphragm of geotextile filter fabric at the end of each day or at the likely threat of rain. Vehicular access points onto construction site will consist of a gravel pad/stabilised access. Silt traps will be installed at entry to kerb and

gutter inlet pits to capture sediment in surface runoff before it enters the pipe network.

- There is concern about the stormwater quality on the east side of the development (Park 1) and also about general disturbance during construction in this sensitive habitat area. To minimize any impact the proposed earthworks will be limited. Batters along the park frontage will be kept low and made steeper than the usual slopes (up to 1:3) which will extend less than 3m outside the boundary. Bio-filtration beds at pipe outlets and at the back of the lots will ensure the quality of runoff into the park will be within or in excess of the standard requirements. Planting and landscaping will discourage pedestrian access into the Park; if deemed necessary a perimeter fence could be considered for the habitat area.

<u>Recommendations:</u>

The implementation and maintenance of an Erosion and Sediment Control plan as shown on Fig. 21 during construction is crucial. By following the prescribed ESCP both the level of erosion will be minimised and sediment discharge from site will be greatly reduced. As discussed it is important that the erosion and sediment control measures are regularly checked, maintained and upgraded to suit the current construction phase.

Install Ecosol Net Tech gross pollutant traps at all headwall outlets and a bio retention basin located in the centre of the development. This system would not only provide a solution which achieves high water quality targets but is also easy to maintain.

Construct a bio retention basin located centre of the development. This will significantly reduce all peak storm events and most importantly reduce the critical events to below pre-developed flow rates. This not only reduces the flooding impact on site and downstream but will also aid the treatment of stormwater quality.

By implementing these measures the development will comply with the stormwater management requirements of the Byron Shires DCP 2002 Stormwater Management Part N and the Northern Rivers Local Government – Handbook of Stormwater Drainage Design.

N

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LEGEND

TEMPORARY DRY SEDIMENT BASIN
SD6-3 TYPE 'C' SOILS
(WITH OVERFLOW WEIR FILTERED BY STRAW BALES SEE SD6-7)

SEDIMENT FENCE (SEE SD6-8)

STABILISED SITE ACCESS (SEE SD5-7)

STRAW BALE FILTER (SEE SD6-7)

SANDBAG BARRIER (PIT INLET FILTER)
TO BE INSTALLED AT EACH INLET PIT (SEE SD6-11)

DIRTY WATER CATCH DRAIN (300 DEEP)
(SEE SD5-5)

SEE SOIL AND CONSTRUCTION MANUAL FOR SD DETAILS

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Iss	Description	Des	Drw	Date	Appd
D	AMENDED LOT NUMBERS	WF	WF	17.08.11	
C	AMENDED LAYOUT	WF	WF	14.05.11	
B	CONCEPT SUBMISSION	WF	WF	24.02.11	
A	CONCEPT SUBMISSION	WF	WF	01.12.10	

CODLEA Pty Ltd

BAYSIDE BRUNSWICK
PROPOSED URBAN SUBDIVISION
BAYSIDE WAY, BRUNSWICK HEADS
LOT 1 DP 871039

EROSION AND SEDIMENT CONTROL - CONCEPT PLAN

-

Scale: 1:1500 at A1 CAD file: LM080082-DR26D.dwg
Datum: AHD CivilCAD file: -

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Dwg. No. Issue
LM080082-DR26 **D**

7.1.1.10 Traffic Impact

Traffic issues at the site are addressed in detail in Appendix M – Traffic Impact Assessment report. The following is a précis of this report.

Observations or Potential Impacts:

The existing intersection layout at Bayside Way and the Old Pacific Highway offers the most practical and efficient use of the road reserve and should be maintained. No intersection works are required based on capacity considerations.

Existing footpaths and proposed locations for off-road shared paths and footpaths are consistent with the requirements of the Northern Rivers Local Government Development Design and Construction Manual and the *Byron Bike Strategy and Action Plan"*.

Recommendations:

- While the layout of the intersection satisfies capacity requirements for projected traffic volumes, the following improvements are recommended to improve safety:
    - Formalisation of the left side on exit standup kerbing.
    - Construction of raised concrete median 1.2m wide, necessitating the requirement for street lighting.
    - Installation of 'Stop' Control (converted from Give Way).
    - Installation of street lighting at intersection.
- In relation to public transport it is recommended that the route for all bus services, with the exception of the Ballina – Tweed Heads service, be extended into the Bayside Estate.

7.1.1.11 Services

Provision of services is discussed in detail at Appendix K - Subdivision Design, Character & Servicing Report. The following is a précis of the relevant section of the report at Appendix K.

Observations and/or Potential Impacts

- All services required for the development of the proposed subdivision are available at the limits of the existing estate. The planning of the existing estate and the construction of the associated subdivisional works was carried out with the future extensions into the area of the current proposal in mind.

Connection points for water of adequate size are available at the limits of the existing subdivision. It appears that the capacity for providing satisfactory water supply will be available.

- The proposed sewer system will be connected to an existing Sewer pump station located in the SE corner of the 3(a) Zone. A desktop analysis of the system indicates that the pump station was sited to pick up the future development (current proposal) with the connection point located at suitable depth and aspect. The total sewer load of the ultimate catchment will be in the vicinity of 280ET (equivalent tenements; including approximately 90 ET from existing development). The rising main, servicing the existing pump station has a size of 150mm diameter and will be adequate to convey the ultimate flows.

<u>Recommendations:</u>

- The sewer system proposed for the subdivision will be a mixture of low pressure sewer and gravity as indicated in the water and sewer concept plan (LM080082-DR25). To avoid trenching deeply into areas where the water table is shallow the far extremities of the estate will have a low pressure system (LPS) that connects to a traditional gravity system at suitable locations.

- It is proposed that each lot serviced by LPS will be provided with a boundary kit at the connection point to the LPS main. The LPS pod (individual well and pump) will be installed and connected by the lot owner at the time of the building construction.

- Power will be extended via underground cabling to the specifications of the local power supplier (Country Energy). Power will typically share it's trench with the communications network. The appropriate authorities will be contacted to confirm the details of the reticulation network.

7.2 Draft Statement of Commitments

Based on the recommendations of various specialist reports and available planning knowledge, a draft Statement of Commitments has been prepared and is contained in the following Table 2.

The Statement of Commitments is focussed on the subdivision of land. Development applications for subdivision will need to be consistent with the Statement of Commitments as a component of this Concept Plan.

Development applications for residential development will also have to be consistent with this Concept Plan. Development controls for dual occupancy and multi-dwelling development are contained elsewhere in this Concept Plan (refer to Section 2.6).

Note: this Statement of Commitments applies only to the Concept Plan. A future planning process for actual subdivision approval will be subject to conditions of approval. It is envisaged that such conditions will go to a greater level of detail than is contained in this Statement of Commitments.

Table 2. Bayside Brunswick Concept Plan 05_0076 – Draft Statement of Commitments

Objective	Ref. No.	Commitment	Timing	Reference/s
Subdivision Design				
Subdivision in accordance with Concept Plan	S1	Development to be generally in accordance with the Concept Plan plans, recommendations of appendices Environmental Assessment, including but not limited to: a) development footprint not extending outside the 2(a) Residential zone pursuant to Byron LEP 1988 b) the number of lots c) the mixture of lot sizes d) conservation of ecologically sensitive areas e) location and dimensions of Park 1 and Park 2 f) retention of trees on public land including road reserves and drainage reserves g) location of stormwater treatment and disposal areas h) extent of earthworks	Details to be submitted in application for subdivision approval Conditions of approval	
Environmental management systems				
Management of potential environmental impacts	E1	A Construction Environmental Management Plan (CEMP) will be prepared prior to construction. This plan will outline the operating conditions and temporary environmental measures to mitigate the impact(s) of subdivision construction activities on sensitive local environments.	To be lodged with application for subdivision	*Guideline for the Preparation of Environmental Management Plans* (Department of Infrastructure, Planning and Natural Resources 2004)
	E2	The CEMP will be implemented in accordance with this Statement of Commitments, and will include the conditions of any licences issued by government authorities.	Condition of subdivision approval & During construction;	

Objective	Ref. No.	Commitment	Timing	Reference/s
Communication and consultation				
Consultation with the community and stakeholders	C1	Adjoining owners will be advised that subdivision works will be commenced within a timeframe envisaged in the CEMP (e.g. 2 weeks prior to work commencing). Any issues raised will be addressed, where reasonable and feasible. Note: adjoining property owners will be notified by the determining authority/ies in accordance with Council policy for notification and advertising of applications.	Condition of subdivision approval	*Guidelines for Major Project Community Consultation* (Department of Planning 2007)
Noise and vibration				
Manage noise and vibration generated during construction, and minimise the effects of construction noise and vibration on surrounding sensitive receptors and the community.	N1	Noise, vibration and dust management measures will be implemented to reduce the impact of construction activities on sensitive receptors and the community.	Condition of subdivision approval	
	N2	Construction hours will be restricted to: • 7 am to 6 pm Monday to Friday • 8 am to 2 pm Saturday • no work on Sundays or public holidays.	Condition of subdivision approval; During construction	AS 2436-1981 *Guide to Noise Control on Construction, Maintenance and Demolition Sites* BS 5228 *Noise and Vibration Control on Construction and Open Sites*
	N3	Works outside standard construction hours will be limited to: • works that do not cause construction noise to be audible, or construction vibration to be felt, at any sensitive receptors • the delivery of material required outside of construction hours by the Police or other authorities for safety reasons	Condition of subdivision approval; During construction	AS 2436-1981 *Guide to Noise Control on Construction, Maintenance and Demolition Sites*

Objective	Ref. No.	Commitment	Timing	Reference/s
		• emergency work to avoid the loss of lives, property and/or to prevent environmental harm • any other work as agreed after appropriate consultation with affected residences, the Department of Planning & Infrastructure, the Office of Environment and Heritage and Byron Shire Council.		BS 5228 *Noise and Vibration Control on Construction and Open Sites*
	N5	Public address systems (including amplified telephone ringers) used at any construction site will not be used outside normal construction hours except in accordance with commitment N3 above.	Condition of subdivision approval	AS 2436-1981 *Guide to Noise Control on Construction, Maintenance and Demolition Sites*
Identify if construction noise goals set prior to construction are being met	N6	A reasonable and feasible approach will be adopted to limit operational noise impacts in accordance with relevant guidelines and conditions of approval. The approach to management of operational noise impacts will be finalised during detailed design. Noise management will be undertaken in consultation with relevant property owners and will be flexible enough to take account of the findings of commitment N7 below.	Condition of subdivision approval	*Industrial Noise Policy* (EPA 2000)
Manage noise and vibration generated during operation to minimise effects on surrounding sensitive receptors and the community	N7	Operational noise mitigation measures will be further reviewed and optimised during detailed design and installed at sensitive receptors identified and set out in Technical Paper No. 3 – *Noise and Vibration Assessment.*	Design, Operation	*Industrial Noise Policy* (EPA 2000)
Air quality				

Objective	Ref. No.	Commitment	Timing	Reference/s
Manage air quality impacts during construction to minimise the effects on surrounding sensitive receptors and the community	A1	Through the CEMP, air quality management measures as identified in the Environmental Assessment will be implemented to reduce the air quality impact of construction activities, including dust and particulate matter, on sensitive receptors and the local community.	Details to be submitted with application for subdivision Pre-construction, Construction	
	A7	A reasonable and feasible approach will be adopted to limit air quality impacts in accordance with relevant guidelines and conditions of approval.	During construction	
Greenhouse gas generation				
Minimise energy consumption and greenhouse gas generation	GG1	Through the CEMP, an efficient construction program will be implemented to minimise greenhouse gas emissions, which will involve: • adequately maintaining and efficiently operating all equipment (i.e. not unnecessarily revving or idling engines) • staging works to minimise double-handling • giving preference to locally-sourced machinery and materials during procurement.	Pre-construction, During construction	
Aboriginal heritage				
Post Clearing Survey –	AH1	In the area identified in figure A of Appendix F, where activities are to be undertaken that have the potential to disturb or damage Aboriginal cultural heritage, a member of the Arakwal Aboriginal Corporation be engaged to conduct a survey of that area after initial clearing works have been undertaken('Post Clearing Survey'). Should any items of cultural heritage significance be identified, the processes outlined in Recommendations 2, 3 and 4 should be followed.	Condition of subdivision approval, to be implemented prior to and during construction	Appendix F of EA
Aboriginal Human	AH2	If human remains are located at any stage during construction	Condition of	Appendix F of EA

Objective	Ref. No.	Commitment	Timing	Reference/s
Remains		works within the Subject Lands, all works must halt in the immediate area to prevent any further impacts to the remains. The Site should be cordoned off and the remains themselves should be left untouched. The nearest police station, the Tweed Byron LALC, and the DECCW Regional Office, Coffs Harbour are to be notified as soon as possible. If the remains are found to be of Aboriginal origin and the police do not wish to investigate the Site for criminal activities, the Aboriginal community and the DECCW should be consulted as to how the remains should be dealt with. Work may only resume after agreement is reached between all notified parties, provided it is in accordance with all parties' statutory obligations.	approval During construction	
Aboriginal Cultural Material	AH3	If it is suspected that Aboriginal material has been uncovered as a result of development activities, including Post Clearing Surveys, within the Subject Lands: • work in the surrounding area is to stop immediately; • a temporary fence is to be erected around the site, with a buffer zone of at least 10 metres around the known edge of the site; • an appropriately qualified archaeological consultant is to be engaged to identify the material; and • if the material is found to be of Aboriginal origin, the Aboriginal community is to be consulted in a manner as outlined in the DECCW guidelines: "Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010)" (2005).	Condition of approval During construction	Appendix F of EA
Notifying the DECCW	AH4	If Aboriginal cultural material is uncovered as a result of development activities within the Subject Lands, they are to be registered as Sites in the Aboriginal Heritage Information	Condition of approval During construction	Appendix F of EA

Objective	Ref. No.	Commitment	Timing	Reference/s
		Management System (AHIMS) managed by the DECCW. Any management outcomes for the site will be included in the information provided to the AHIMS.		
Conservation Principles	AH5	It is recommended that all effort must be taken to avoid any impacts on Aboriginal Cultural Heritage values at all stages during the development works. If impacts are unavoidable, mitigation measures should be negotiated between the Proponent and the Aboriginal Community.	Condition of approval During construction	Appendix F of EA
Visual impact				
Minimise visual impact	V1	A detailed landscape plan shall be submitted with any application for subdivision. The plan shall be consistent with Appendix I of the Environmental Assessment for	In application for subdivision approval, to be implemented during construction	Appendix I
Biodiversity				
Minimise impact on biodiversity during construction	B1	The width of the road corridors will be minimised where roads traverse significant habitats and vegetation.	Details to be submitted in application for subdivision	
Vegetation Management Plan	B2	A Vegetation Management Plan will be prepared for the Subject site. The plan will outline both mitigation and compensatory strategies. The plan will set out a strategy for the rehabilitation and management of the Environmental Protection Zones on the Subject site (i.e. the areas covering approximately 11.5 ha between the development footprint and Simpson's creek) and outline a compensatory replacement planting strategy to offset the loss of the ecologically significant trees. All Koala and Glossy black cockatoo food trees impacted by the development will be replaced at a ratio of	In application for subdivision approval Condition of approval	Appendix C of the Environmental Assessment

Objective	Ref. No.	Commitment	Timing	Reference/s
		2:1.		
Wallum Froglet habitat	B3	An area of constructed Wallum froglet habitat is proposed within Park 1 and 2. These areas will be incorporated into the Stormwater management plan and will result in the net gain of almost 3000m 2 of Wallum froglet habitat. A Wallum Froglet Compensatory Management Plan will guide the construction and management of this habitat.	Details to be submitted in application for subdivision Condition of approval	Appendix C of the Environmental Assessment
Wallum Froglet Compensatory Habitat Plan	B4	A Wallum Froglet Compensatory Habitat Plan will be prepared to the satisfaction of the Office of Environment and Heritage prior to approval of an application for subdivision of the land. The WFCHP is to be generally in accordance with information prepared by James Warren and Associates and submitted as a component of the Concept Plan.	Prior to approval of an application for subdivision or works	Appendix C of the Environmental Assessment
Clearing protocol	B4	Clearing protocols will be implemented for removal of habitat trees, including survey and marking of all significant trees to be retained within the subdivision. Marks on trees are to be maintained until the subdivision is constructed in accordance with approvals and are to be removed after the subdivision is constructed.	Condition of approval Prior to construction During construction Prior to release of Subdivision Certificate	
Traffic and access				
Maintain traffic movements and minimise traffic delays on the road network during construction of	T1	Through the CEMP, traffic management measures will be implemented to reduce the impact of construction activities on the road network.	Details to be submitted in application for subdivision approval; Condition of	

Objective	Ref. No.	Commitment	Timing	Reference/s
the project			approval; Pre-construction, Construction	
Traffic Management Plan	T3	A Traffic Management Plan will be developed prior to construction, detailing traffic control and mitigation measures in different traffic environments as circumstances arise	Preliminary information to be submitted in application for subdivision approval; Condition of approval	
Existing infrastructure	T5	Any existing road shoulders disturbed during construction will be restored to their pre-existing standard to cater for any cyclist and pedestrian movements.	Condition of approval During construction	
Intersection of Bayside Way and Old Pacific Highway	T5	The following improvements shall be undertaken to improve the safety of the intersection of Bayside Way and the Old Pacific Highway: • Formalisation of the left side on exit standup kerbing. • Construction of raised concrete median 1.2m wide (necessitating the requirement for street lighting – see below). • Installation of 'Stop' Control (converted from 'Give Way'). • Installation of street lighting at intersection.		Appendix M
Bus services	T6	The proponent shall inform local bus operators that the development is occurring and will request that bus services, with the exception of the Ballina – Tweed Heads service, be extended into the Bayside Estate	Condition of approval Prior to construction	
Manage access to private properties	T7	Access arrangements to private properties during construction of the subdivision will be determined in consultation with the	Condition of approval	

Objective	Ref. No.	Commitment	Timing	Reference/s
during construction of the project		land owners.	Pre-construction	
Temporary disruption of access	T8	Where access to private properties is temporarily affected by construction of the project, alternative access arrangements will be agreed in consultation with the land owner.	Condition of approval Pre-construction	
Soil and water quality				
Minimise impacts on water quality during construction of the project	SW1	Through the CEMP, soil and water quality management measures as identified in the Environmental Assessment will be implemented to reduce the impact of construction activities on soil and water quality. These measures will include: • installing erosion and sediment controls • diverting surface run-off away from disturbed areas • planning construction works to minimise the length of time soils are disturbed • planning construction activities at watercourses to coincide with dry periods where possible • clearly identifying areas required to be disturbed to ensure such disturbance is minimised and as little vegetation is cleared as possible • restricting construction traffic to defined roads • ensuring appropriate storage and bunding of chemicals and fuels.	In application for subdivision approval Pre-construction, Construction	*Soils and Construction: Managing Urban Stormwater* (Landcom 2004) Appendix L
Minimise impacts on water quality during operation of the project	SW2	A stormwater management system will be developed, in accordance with best practice stormwater management, during detailed design of the subdivision. The stormwater management system will: • give particular attention to the provision of safe overland flow paths • ensure that stormwater flows are not increased, modified	Condition of approval Design, Pre-construction	Appendix L

Objective	Ref. No.	Commitment	Timing	Reference/s
		or diverted as a result of the development • implement measures to prevent erosion/scour of any diversion channel or stormwater discharge point.		
Minimise likelihood of alteration of water quality conditions post-construction	SW3	Consider importation of soil to reduce the likelihood of residents applying chemicals to increase soil pH.	Details of proposed soil source and type (if any) to be included in application for subdivision Condition of approval	
Information for future residents	SW4	Prepare resident information package regarding prevailing soil conditions the most ecologically sustainable methods for gardening in these conditions and any other sensitivities of the local ecosystem, including information on local endangered species such as the Wallum Froglet.	Preliminary details of resident information kit to be submitted with application for subdivision Condition of approval	
Water cycle management	SW5	As part of the CEMP, prepare and implement an Erosion and Sediment Control plan as outlined in Section 6 of Appendix L during construction.	Details to be submitted with application for subdivision Condition of approval	Appendix L
Bio-retention basins	SW6	Construct bio retention basins in the centre of the development and in other locations as indicated in plans in Appendix L	Details to be submitted with application for subdivision Condition of	Appendix L

Objective	Ref. No.	Commitment	Timing	Reference/s
			approval	
Acid Sulfate Soils	SW7	In the event that excavations are required outside of the proposed development footprint or below 2.0m below surface level within the building envelope additional testing should be considered by the consent authority	Information of excavation levels to be submitted with application for subdivision. Condition of approval if warranted	
Hazard and risk				
Minimise hazards and risks associated with the project	HR1	Construction and operational hazards and risks associated with noise, air quality, biodiversity, and soil and water quality will be managed through implementation of the commitments identified above.	Condition of approval During construction	Technical Paper No. 6 – Preliminary Hazard Analysis Australian Standard AS 2885:2007 Pipelines: Gas and Liquid Petroleum, Design and Construction
	HR2	Any hazardous substances delivered to/removed from the construction site will be transported and handled according to appropriate regulations.	Condition of approval During construction	
Geotechnical				
	G1	All site preparation and earthworks should be carried out in accordance with AS3798-2007 'Guidelines on earthworks for residential and commercial developments' and also include the recommended measures detailed in section 6.1.3 of Appendix B Geotechnical Engineering Assessment: • Clearing, stripping and grubbing should be carried out in	Preliminary details to be submitted with application for subdivision. Condition of approval	Appendix B Geotechnical Engineering Assessment

Objective	Ref. No.	Commitment	Timing	Reference/s
		areas subject to any earthworks. All soils containing grass and root material should be stripped from the construction areas, removed from the site or stockpiled for later use as landscaping material. These materials are not considered suitable for structural fill. Stripping depths will be shallow on this site (0.1 – 0.2m) with possible isolated areas containing deeper organic material. • Any depressions formed by the removal of vegetation, underground elements etc should have all disturbed weakened soil cleaned out, backfilled and compacted with suitable fill in a controlled manner;	During construction	
		• Where fill is to be placed, the exposed ground surface should be inspected from a representative from Border-Tech, to detect any soft or loose material. Loose soils, particularly loose clayey sands, should be compacted to the appropriate requirements or removed and replaced. • Fill material is to be placed in layers not exceeding 200mm loose thickness. Where backfill for service trenches is carried out the above layer thickness applies however if vibrating plates are used the layers are to be placed in 100mm loose thickness • Material is to be compacted to achieve the following standard Maximum Dry Density (MDD) ratios are determined by AS 1289 Test 2.2.1: o Residential Allotments 95% o Base Material for roadways 98% o Sub-base material for roadways 95% These compaction standards are to be confirmed with the		

Objective	Ref. No.	Commitment	Timing	Reference/s
		local council requirements and earthworks standards at the time of earthworks. • Compaction is to be tested as per AS3798 – 2007, Section 8.0 and carried out by a NATA accredited soils laboratory.		
	G2	The placement of all structural fill material is to be inspected, tested and certified as per Level 1 requirements during the earthworks operations to ensure that all fill is placed in a controlled manner in accordance with AS 3798 – 2007.	Condition of approval During construction	
	G3	All permanent batter slopes are to be protected from erosion and scour by use of appropriate drainage and vegetation	Condition of approval During construction	Section 6.1.4 of Appendix B
Waste and resource management				
Minimise waste generated, and maximise reuse and recycling during the project	W1	Through the CEMP, construction waste management measures will be implemented to ensure waste generation is minimised, reuse and recycling is maximised, and management of waste (including classification and disposal) is undertaken in accordance with the relevant provisions of legislative guidelines.	Condition of approval Prior to construction; During construction	*Protection of the Environment Operations Act 1997* *Waste Avoidance and Resource Recovery Act 2001* *Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes (DEC 1999c)*

Objective	Ref. No.	Commitment	Timing	Reference/s
Public safety				
Ensure public safety	PS1	All construction compounds and work areas will be fenced to limit public access during construction.	Condition of approval During construction	
	PS2	Appropriate signage will be installed at construction compounds and work areas to maximise public safety.	Condition of approval During construction	
Socio-economic				
Maximise economic benefits to the local community	S1	Where practicable, local contractors and suppliers will be used for the provision of labour and services during construction of the project.	During construction	
Services and utilities				
Minimise disruption to utilities and services	SU1	Utilities and services potentially affected by construction of the project will be identified and requirements for their diversion, protection and/or support identified. Alterations to services will be determined in negotiation with the service providers. Disruptions to services resulting from the project will be minimised.	Prior to construction	
Ancillary facilities				
Minimise environmental and social impacts from construction of temporary ancillary facilities	AF1	Sites chosen for temporary ancillary facilities will satisfy the environmental criteria provided in the Environmental Assessment, unless otherwise approved through the CEMP.	Prior to construction	
Public land				
Provide public amenities	P1	Public recreation facilities and/or amenities shall be provided in the expanded road reserve area southeast of the subdivision, in the vicinity of the proposed car parking area	Details to be submitted with application for	

Objective	Ref. No.	Commitment	Timing	Reference/s
		and Simpsons Creek foreshore. Consideration shall be given to the locating the facilities to benefit from natural shade from existing trees, and the necessity for construction of shade structures. The type, number and cost of facilities shall be negotiated with Council prior to determination of an application for subdivision. Subject to environmental assessment, access (including disabled access) shall be constructed in accordance with relevant standards.	subdivision approval Condition of approval	
Negotiate dedication of land	P3	The proponent shall liaise with public authorities including Byron Shire Council and the Office of Environment and Heritage regarding the long term ownership of land at the east of the site.	Prior to submission of application for subdivision approval. Note: if ownership arrangements are not resolved and submission of an application is hindered, the proponent may submit an application which proposes to dedicate land to Council.	
Footpaths	P3	Footpaths shall be provided as shown on Figure 2 of this Environmental Assessment	In application for subdivision approval During construction	Figure 2 of EA
S94 Contributions	P4	Contribute funds in accordance with Council Section 94 plan.	Condition of	

Objective	Ref. No.	Commitment	Timing	Reference/s
		Note: arrangements may need to be made with Council to ensure the existing centrally located park west of the 3(a) zone is embellished with appropriate facilities	approval	
Section 94 contributions – credits	P5	Section 94 contributions will be credited for developer construction of public facilities e.g. facilities constructed near the access to Simpsons Creek.	Details of works and costs to be resolved prior to determination of application for subdivision.	
Existing access track to be rehabilitated	P6	Development applications for subdivision are to include a restoration plan for the existing track inside the road reserve from the northeast of the subdivision south to Simpsons Creek.	Details to be submitted in application for subdivision approval	
Continuation of road reserve link through the site	P7	Subdivision design is to ensure that unfettered access is provided from a road/s within the development to the existing road reserve that extends south from the site, near Simpsons Creek. Note: liaison with the Land and Property Management Authority may be required to ensure satisfactory arrangements.	Details to be included in application for subdivision approval Prior to release of Subdivision Certificate	

8. Key Issues

8.1 Strategic Planning

1.1 Justify the proposal with reference to relevant local, regional and State planning strategies. Provide justification for any inconsistencies with these planning strategies.

The provisions of the Far North Coast Regional Strategy have been addressed in Section 4 of this report.

The *Brunswick Heads Settlement Strategy 2004* applies to the site. Key points of this Strategy, with regard to the subject land, are:

- Acknowledgement of the Bayside Brunswick area is the only residential land supply for Brunswick Heads;
- Estimated potential for 270 dwellings, or about 13 years supply;
- Recognises that the land will not be able to be subdivided until sewage treatment capacity is available;
- Proposed a variety of development types including:
    - single dwelling-houses;
    - garden flats (secondary dwellings);
    - dual occupancy;
    - medium density;
    - bed and breakfast establishments.
- Streets and lanes in Brunswick Heads village are "*laid out in a grid pattern that provides choice in traffic routes*."
- Promotes the use of "*single-sided roads... as a means of bringing natural areas into the public domain*."

The proposed Concept Plan is consistent with the *Brunswick Heads Settlement Strategy 2004.*

8.2 Subdivision Design, Layout and Character

The design rationale for the subdivision is the subject of a specific report in Appendix K - Subdivision Design, Character & Servicing Report. The DGR's are addressed more specifically in the following sections.

8.2.1 Character of Development

2.1 Demonstrate the consistency of the proposal with the character of existing development in terms of the locality, street frontage, scale, building envelopes and future built form controls, aesthetics, energy and water efficiency and safety.

The existing first stages of Bayside Brunswick were developed between 10 and 20 years ago. The consistency of the proposed subdivision with the existing character of the area is described as follows:

Locality – the proposed development will extend upon existing residential settlement at Bayside Brunswick, which is an entirely residential community. There is no tourism accommodation, industrial development or commercial development. A child care centre is operating at the edge of the existing residential area, adjacent to a small park. These facilities will also service the proposed development and will be central to the complete Bayside Brunswick community.

Street frontage – existing developments are set back in accordance with the planning controls of the late 1980's and 1990's – generally between 3.0m and 4.5m. The property boundary is indistinguishable in many places due to the absence of fences or plantings at front property boundaries. The proposed development will not be consistent with existing stages due to changed planning controls and design philosophies since the first stages were developed.

Existing streets in Bayside are curvilinear with some culs-de-sac, typical of 1980's and 1990's subdivision planning. The proposed development provides a grid pattern that provides choice and efficiency for drivers, pedestrians and cyclists, with two small cul-de-sac streets.

Layback (mountable) kerb is used extensively throughout the existing development. This allows vehicles to easily mount the kerb onto the grass verges and to park close to, or on, footpaths. Footpaths in some areas are less than 1.0 metre from the kerb and predominantly not delineated by landscaping. The proposed development will apply contemporary construction standards for infrastructure.

Scale – the proposed development will approximately double the urban footprint of Bayside Brunswick. It is entirely contained within land zoned 2(a) Residential and is a logical outcome of the zoning in terms of scale.

Density – Bayside is a conventional low density residential area. The proposed subdivision has a compatible density of approximately 10.5 dwellings per hectare.

Built form – existing development in Bayside is comprised entirely of single storey brick construction, predominantly tile roofs although there are some sheet metal roofs. The settlement pattern is homogenous, with a predominance of single

detached houses that would probably all comply with the 0.5:1 floor space ratio stipulated in Council's planning controls for the past 15 to 20 years. A negligible amount of native vegetation was retained in the early stages, but some planted street trees provide some visual relief. The majority of existing vegetation is found in the edge plantings of private house lots.

The proposed subdivision will retain a substantial number of existing trees. The scale of built form is not expected to be substantially different to that of the existing development, given the NSW Housing Code and the anticipated Small Lot Code.

It is expected that the majority of housing development will be eligible for complying development status in accordance with the NSW Housing Codes. For applications that are non-complying development the Coastal Design Guidelines, North Coast Design Guidelines and Byron DCP 2002 will apply. It is not proposed to prescribe building envelopes in the subdivision.

Energy efficiency – contemporary standards (BASIX & BCA) will apply to future development.

Water efficiency – contemporary standards (BASIX & BCA) apply to future development.

Safety – the subdivision has been designed with due regard to CPTED principles including:

Surveillance: The subdivision layout and location of open spaces will provide natural surveillance. The road network, landscaping and lighting of the development have been designed to add amenity and control risk of crime. Technical surveillance and formal surveillance are not warranted and are not proposed.

Access control is achieved by footpaths and cycleways, landscaping, attractive public spaces and clear access paths. Perimeter roads mean that access to bushland is open to public view rather than hidden away behind houses. Technical access control and formal access control are not warranted and are not proposed.

Territorial reinforcement. Public spaces have been located and designed to foster community "ownership" and active use. Boundaries between private and public space are clearly delineated by perimeter roads.

Space management. The proposed open spaces are centrally located and will be highly visible to residents. Ongoing maintenance and repair of the existing neighbourhood park is in the hands of Council. Ongoing ownership, management and maintenance of bushland areas is proposed to be in the hands of a public authority.

8.2.2 Coastal Design Requirements

2.2 Demonstrate the consistency of the proposed subdivision design and layout with the Coastal Design Guidelines for NSW, NSW Coastal Policy 1997 and State Environmental Planning Policy (SEPP) 71 – Coastal Protection.

8.2.2.1 Coastal Design Guidelines

These Guidelines contain design principles and examples of desirable and undesirable planning practice. In the vernacular of these guidelines Bayside Brunswick would constitute a Coastal Village. The relevant Design Principles for coastal settlements are:

Defining the Footprint and Boundary:

The footprint is defined by the extent of the existing 2(a) zone and an assessment of environmental attributes. The proposed development will define the footprint and boundaries of the Bayside Brunswick residential area.

Connecting Open Spaces:

Residents of the development will utilise the existing neighbourhood park and local sportsfields. Existing footpaths will be extended into the proposed subdivision.

There are walking and cycling tracks connecting the subject site to the sportsfields to the north of the site, and to the village of Brunswick Heads.

Bushland at the east of the development is connected to other areas of native vegetation further south, without clearing or other interruption.

Stormwater treatment areas within the proposed development provide visual amenity use and are connected to streets and the neighbourhood centre by footpaths.

Protecting the Natural Edges

The development is entirely contained by a perimeter road for urban design and bushfire management purposes. This road provides a buffer to development and protects the natural edges to the development.

Public land is provided at the foreshore to Simpsons Creek. Access is available to the creek.

View to natural areas are available from many house lots and public areas.

Reinforcing the Street Pattern

The street pattern in Bayside Brunswick will be improved by the extension of unconnected streets into the new developed area, to be reconnected to the network. The proposed development will provide higher levels of vehicle and pedestrian choice in an easily navigable network.

Pedestrian paths are provided on many streets, and edge streets are used at the frontage of reserves and other natural areas.

Street amenity will be improved by landscape plantings using native species.

There are no areas of non-compliance with the Coastal Design Guidelines.

8.2.2.2 NSW Coastal Policy

The development is entirely within the NSW Coastal Zone (refer to Fig. 22).

Strategic Action 1.4.7:

Development proposals in or adjacent to estuaries will only be approved where conditions can be imposed which minimise potential impacts to the extent that they are acceptable under the Rivers and Foreshores Improvement Act, 1948 and Fisheries Management Act, 1994.

Development proposals in or adjacent to estuaries will be rejected where they have the potential to adversely impact on the physical amenity or ecology of the estuaries to the extent that they are unacceptable under the Rivers and Foreshores Improvement Act, 1948 and Fisheries Management Act, 1994.

Development within Crown owned estuaries must comply with the principles of Crown land management under the Crown Lands Act, 1989 and the Crown Land Foreshore Tenures Policy (Non Commercial Operations).

Comment: Potential impacts have been identified and addressed. Stormwater quality control will be provided within the development to avoid the potential for adverse impacts on the estuary. Refer to stormwater report in Appendix L.

Strategic Action 2.1.3:

Physical and ecological processes and hazards will be considered when assessing development applications.

Comment: All physical and ecological processes have been assessed and taken into consideration.

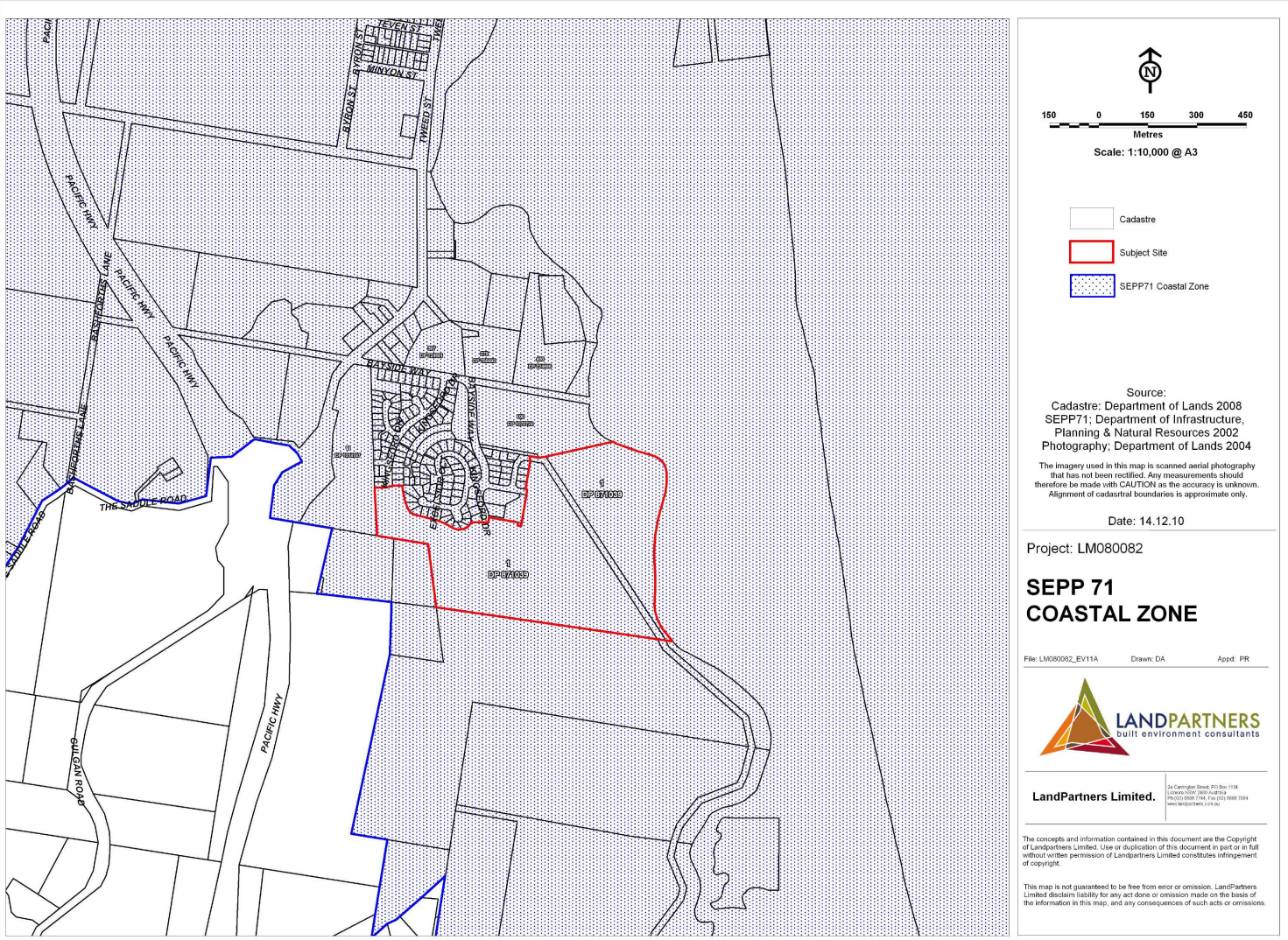

Figure 22. SEPP 71 Coastal Zone

Strategic Action 3.2.2:

The use of good design principles will be encouraged to ensure more compact, human scale towns are developed with their own character within the constraints of existing infrastructure.

Comment: The development is in accordance with the NSW Coastal Design Guidelines and the North Coast Design Guidelines.

Strategic Action 3.2.4:

In preparing and amending regional and local environmental plans and development control plans and when assessing development applications, consideration of the design and locational principles contained in the Coastal Policy (Appendix C Table 3) will be required.

Comment: The design considerations listed in Table 3 have been superseded by the NSW Coastal Design Guidelines and the North Coast Design Guidelines and therefore are not further addressed in this report.

Strategic Action 6.2.2:

The design of towns and buildings should have regard to energy efficient principles, for example compact town form related to transport networks, in order to reduce energy dependency.

Comment: The design provides efficient movement of people and transport. Future residential development will meet or exceed BASIX requirements for energy efficiency.

Strategic Action 6.4.1:

A greater choice in housing will be encouraged in coastal urban areas through local and regional housing strategies.

Comment: The development provides housing choice in accordance with the issues and principles identified in the Far North Coast Regional Strategy.

The Brunswick Heads Settlement Strategy is a local strategy that applies to the land. It encourages medium density development close to the site of the intended neighbourhood shop, both to support the financial viability of the shop and to provide walkable access to daily needs. Subsequent to this strategy being developed (1999-2001) the stronger and clearer NSW Coastal Design Guidelines

and North Coast Design Guidelines have been introduced. These also provide support for higher densities closer to shops and services. The proposed development is consistent with the Brunswick Heads Settlement Strategy.

There are no areas of non-compliance with the NSW Coastal Policy.

8.2.2.3 North Coast Urban Design Guidelines

These guidelines support the FNCRS. They provide a review of existing urban character on the north coast, and guidance on the design of new development. The Guidelines "*outline the principles and strategies for managing environmentally, economically and socially sustainable settlement growth*" as well as streetscape and built form, in different contexts.

PRINCIPLES FOR SETTLEMENT GROWTH:

Principles to apply to all future development

- Maintain and protect the key natural features throughout and around the settlement (coastal environment, river landscape, forested areas) to ensure the unique character they provide for the town is retained
- Prevent future growth in areas of high environmental or natural resource value and areas prone to flooding, erosion and inundation.
- Maintain public open space and public access along foreshores, reserves and bushland and set development back from areas of high ecological value
- Encourage plant species which are compatible with the local climate, topography and natural vegetation
- Prevent privatisation of foreshore and riparian edges
- Ensure interconnectivity of parks, public spaces, main streets, services, infrastructure and natural features
- Ensure development responds sensitively to the density and scale of the existing settlement
- Ensure planning and development respond to the local topography and climate
- Ensure provision of commercial and community services

Principles for Consolidated Growth

- Define boundaries around settlement to limit further outward expansion
- Use existing transport infrastructure to inform an urban boundary and minimise outward growth
- Consolidate disconnected urban areas and maintain the character of each before expanding main settlement boundaries
- Reconnect existing disconnected urban areas by consolidating the large scale public spaces that isolate them from the settlement centre
- Enhance connections between disconnected urban areas and the town centre
- Concentrate new development and increased heights and densities in town centres and in areas of greatest public amenity/services/infrastructure that have already been influenced by urban development.

Principles for growth by expansion at the fringe or new 'greenfield' development

- Encourage new development on existing unconstrained land to minimise impact on natural environment and resources
- Maintain the character of the formal street grid to reinforce visual and physical connections to the natural landscape
- continue grid with expanding development

Comment:

Natural areas have been protected around the edge of the urban footprint and will contribute to the character of the settlement.

The development will facilitate public access to Simpsons Creek foreshore.

Open space is available in an existing park at the centre of the Bayside settlement. Drainage reserves will have a natural aesthetic and will provide open space amenity.

A grid street pattern will provide connectivity between different residential areas and will provide route options for pedestrians and cyclists.

The landscaping plan favours use of local plant species.

Development is expected to be consistent with the density and scale of the existing Bayside residential area.

The following sections of the NCDG apply to the Bayside Brunswick proposal:

NCUDG 10.1 Settlement consolidation - coastal village

Key points:

- Define boundaries around the settlement to limit outward expansion
- Maintain public open space and public access along waterways; set development back from environmentally sensitive areas; prevent privatisation of foreshore

Comment: The boundaries of the urban footprint are defined by the 2(a) Residential zone and the use of edge roads around the perimeter of the subdivision. Outer expansion is not possible under the current LEP.

Development is set back from environmentally sensitive areas. Housing development and other residential activity is physically separated from environmentally sensitive areas by perimeter roads.

The land to be subdivided is more than 70 metres from the foreshore of Simpsons Creek. Public access will be provided to the foreshore.

NCUDG 10.6 Settlement expansion - existing town

Key points:

- Sensitive environments protected
- Public access to coast and waterways maintained; cycle ways link key public spaces

Comment: Sensitive environments, including significant vegetation and drainage areas within the urban footprint, have been protected.

Public access to Simpson's Creek is maintained and improved with car parking and basic facilities.

NCUDG 10.7 New Settlement – 'greenfield sites'

Key points:

- Clear settlement boundaries and consolidated footprint limit impact on surrounding agricultural land
- Development imposes minimum threat on existing ecosystem, natural forests and river edges preserved
- Network of cycleways throughout the town
- Generous public open space provided throughout settlement
- Street pattern and settlement structure respond to the river and surrounding topography

Comment: The development has clear boundaries. The footprint and internal layout avoids impact on existing ecosystems. There are substantial areas of open space, and the street pattern and lot layout respond to topography and vegetation on the site.

NCUDG 11.3 Streetscape – settlement expansion

- Maintain consistent setback from street
- Maintain public access and view corridors to surrounding natural landscape
- Small scale retail, school and church with public off-street parking
- Allow for on-street parking
- Encourage deep soil zones in the centre of blocks permitting large trees to mature
- Adopt street dimensions and grid consistent with traditional settlement
- Consider siting garages to rear to reduce impact on streetscape

Comment: The majority of housing development is expected to accord with the NSW Housing Code, which will result in consistent street setbacks. The street layout and reserves provide high levels of public access and views to the natural landscape around and within the development. Road reserves and pavement widths are sufficient to accommodate on-street parking.

Building envelopes are not prescribed. Existing large native trees will be provided at the edge of blocks to avoid tree removal for construction.

Proposed road reserves and pavement widths are narrower than in the existing Bayside development, which are considered excessive in view of traffic volumes and pedestrian usage.

NCUDG 11.4 Streetscape – Greenfield

- Maintain consistent setback from street
- Small scale retail, public plaza and community centre with public off-street parking
- Maintain public access and view corridors to natural landscape
- Encourage deep soil zones in the centre of blocks permitting large trees to mature
- Encourage siting garages at rear to reduce impact on streetscape
- Allow for on-street parking
- Encourage regular shaped blocks and building address to street frontages
- Maintain street planting, formed footpaths, kerbs and guttering

Comment:

- Building setbacks will be in accordance with the NSW Housing Code and Byron DCP 2002.
- An adjoining site is zoned for commercial uses e.g. neighbourhood shop. Given the population catchment of Bayside, it is envisioned that any such facilities will be small in scale. Car parking for any such development would be subject to Council standards and requirements.
- Public access to natural landscape areas will be the subject of future negotiation with Council and State agencies. Informal access is currently available to Simpsons Creek. The proposal is to acknowledge this behaviour and provide some car spaces and minor recreational facilities e.g. barbecue/s, table.
- The location of housing on individual sites will be subject to the provisions of the NSW Housing Code and other development controls.
- The siting of garages at the rear of properties is not required by any planning instrument or the NSW Housing Code.
- Most building blocks are regularly shaped. Some are irregular due to the alignment of roads and/or location of large trees.

NCUDG Other/miscellaneous:

- Maintain generous footpaths separated from street by a grassed or landscaped median strip

Comment: Footpaths are provided in strategic locations, generally within road reserves or through a drainage reserve. Design detail will be addressed in a future development application.

There are no areas of non-compliance with the North Coast Urban Design Guidelines.

8.2.2.4 State Environmental Planning Policy No. 71 Coastal Protection

The relevant provisions of SEPP 71 apply to preparation of a local environmental plan or determination of a development application, neither of which is proposed in this Concept Plan. However, the DGR's require consideration of the issues in SEPP 71, so it is necessary to ensure that the conceptual development is capable of satisfying the relevant provisions of SEPP 71 from a design point of view and also to avoid unnecessary amendments at the development application stage.

Clause 7 Application of clause 8 matters:

The matters for consideration set out in clause 8:
(a) should be taken into account by a council, when it prepares a draft local environmental plan that applies to land to which this Policy applies, and
(b) are to be taken into account by a consent authority when it determines a development application to carry out development on land to which this Policy applies.

Clause 8 Matters for consideration:

The matters for consideration are the following:
(a) the aims of this Policy set out in clause 2,
(b) existing public access to and along the coastal foreshore for pedestrians or persons with a disability should be retained and, where possible, public access to and along the coastal foreshore for pedestrians or persons with a disability should be improved,

> Comment: Existing access to Simpsons Creek will be retained. Opportunities for improvement of access are yet to be resolved in negotiation with relevant authorities.

(c) opportunities to provide new public access to and along the coastal foreshore for pedestrians or persons with a disability,

> Comment: Access to Simpsons Creek will be facilitated by a perimeter road and car parking. The nature of access facilities is a matter for future negotiation with relevant authorities.

(d) the suitability of development given its type, location and design and its relationship with the surrounding area,