NSW GOVERNMENT | Department of Primary Industries

OUT14/5596

Ms Kim Johnston
Industry, Social Projects and Key Sites
NSW Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Kim.Johnston@planning.nsw.gov.au

24 FEB 2014

Dear Ms Johnston,

West Culburra Mixed Use Concept Plan (MP 09_0088)
Comment on the Response to Submissions Report

I refer to your letter dated 10 December 2013 to the Department of Primary Industries in respect to the above matter.

Comment by Crown Lands

Crown Lands advise:

(i) the proposal includes development on Crown land being Lot 7309 DP1163571, and the adjacent Crown waterway being that land below the Mean High Water Mark of the Crookhaven River.

(ii) while the revised Plan has addressed some of the concerns raised by Crown Lands, issues with the use of Crown land, maintenance of structures proposed to be sited on Crown land, and proposed clearing of Crown land remain.

(iii) overall the proposed development has no authorisation to utilise Crown Lot 7309 DP1163571 or Crown land below Mean High Water Mark as part of the development. This includes any proposal for clearing, walkway/cycleway, boardwalks, viewing platforms or any other structure or activity. As a result, any proposed development on the Crown land cannot be taken to be achievable by the applicant.

Detailed comment on these matters, and on statements made by the applicant regarding the amount of foreshore currently available for public use, are included in Attachment A.

For further information please contact Helen Wheeler, Natural Resource Project Officer (Nowra Office) on 4428 9133 or at helen.wheeler@lands.nsw.gov.au.

Comment by Fisheries NSW

Fisheries NSW advise:

(i) The proposed development site lies adjacent to Curleys Bay within the Crookhaven River estuary which supports extensive areas of marine

vegetation (including seagrass, mangroves and saltmarsh) and Priority Oyster Aquaculture Areas and commercial and recreational fishing grounds.

(ii) While the proposal includes a 100 metre foreshore buffer zone, and most of the issues associated with the original proposed buffer zone have been rectified, the overall development still remains a significant risk to these fisheries assets due to stormwater quality impacts.

(iii) The proponents have partly addressed the issues related to the proposed foreshore tourism development ("leisure hub") component which were evident in the original Environmental Assessment report. They have proposed that detailed planning for this aspect be deferred until later stages in the approval process.

(iv) However, significant issues related to risks to water quality remain. The water quality modelling continues to suggest that water quality emanating from the site will improve as a result of the development. This is difficult to accept given the nature of the site and the scale and duration of the works required to complete the development. Reduced water quality poses a significant risk for the nearby oyster farms in particular. The modelling is clearly flawed in one respect in that the modelling has not included the "during development" phase, only the "pre-development" and "post-development" phases.

(v) Fisheries NSW believes that an independent, third-party review of the water quality modelling and water quality treatment components of the proposal are required before approval of the Concept Plan could be supported.

Further detailed comment is provided at Attachment B.

For further information please contact Allan Lugg, Senior Fisheries Conservation Manager (Huskisson office) on 4428 3401, or at: allan.lugg@dpi.nsw.gov.au.

Comment by NSW Office of Water

The key issue for the NSW Office of Water in relation to this concept proposal remains the protection of the riverine and estuarine foreshore of the Crookhaven River and associated wetlands.

Additional comment is provided in Attachment C.

For further information please contact David Zerafa, Senior Licensing Officer (Nowra Office) on 4429 4441 or at david.zerafa@water.nsw.gov.au.

Yours sincerely

Kristian Holz
Director, Policy Coordination, Corporate Planning & Governance

Attachment A

West Culburra Mixed Use Concept Plan (MP 09_0088)
Comment on the Response to Submissions Report
Comment by Crown Lands

---

1. Proposed use of Crown land.

(i) As per the Director General Requirements, any proposed public infrastructure, including cycling/walking tracks or other utilities, are required to be located on private land and outside of any riparian corridors/ ecological buffers.
The applicant proposes to occupy part of Crown Lot 7309 with a foreshore walkway/cycleway and viewing platform. This lot forms part of a riparian corridor and an ecological buffer. Any establishment of the proposed public recreation facilities on Lot 7309 would require it to be reserved for Public Recreation prior to any development, and for management of the Lot to devolve to Shoalhaven City Council.
Crown Lands has not received enquiries or an application to this effect from either the applicant or Shoalhaven City Council. Consequently at this stage Crown Lands cannot consent to the siting of these facilities on the Crown land.

(ii) The revised Plan proposes a boat ramp and associated infrastructure on and adjacent to freehold Lot 61 DP 755971, as well as a second viewing platform and possible sea-wall revetment works. Any development of Crown land above or below the Mean High Water mark must have the prior approval of Crown Lands. No approval has been sought for these works, and approval is in no way guaranteed should an application be received.
The siting, development, long term maintenance, management and tenure of any structures or infrastructure placed within the Crown waterway must be determined and agreed to by involved parties prior to any such development taking place.

2. Proposed vegetation clearing.

Crown Lands does not support the clearing of foreshore vegetation on Crown land, above or below the Mean High Water Mark, as is proposed by the applicant. This includes proposed clearing for the installation of the walkway/cycleway and viewing platform, as well as for "vistas".

Apart from the application of SEPP14 to the Crown land, the Crown land and waterway are protected from clearing under the provisions of Section 11 of the *Crown Lands Act* 1989 and also by the *Fisheries Management Act 1994* (in relation to protection of aquatic habitats, including mangroves and certain other marine vegetation under Part 7 of that Act).

The areas of proposed clearing have an intended zoning of E2 Environmental Conservation (currently 7(a) Environmental Protection (Ecology)) and W1 Natural Waterway (currently unzoned). Clearing of these areas is at odds with the objectives of these existing and/or future zonings.

The applicant has not identified the proposed on-going management of the areas cleared of vegetation. The removal or part removal of foreshore vegetation to support the development will establish an expectation that regrowth will be routinely removed to maintain the cleared area. Removal or part removal of vegetation also induces pressure for the cleared areas to be extended so that water "vistas" are available from a greater number of residential and tourist premises. This inevitably risks ongoing unauthorised and illegal clearing of flora and damage to the wetland and estuarine environments.

It would be inconsistent to provide education on the "removal of species being prohibited by law" after that same action has been undertaken by the development. The proposed provision of educational material does not negate that unauthorised clearing is likely to be undertaken. The

applicant also has not identified who will undertake and maintain the production, installation and distribution of any such educational material.

3. Proposed offsets for clearing of vegetation.

The applicant has stated that land described as the Crookhaven River Foreshore Park is proposed to be used for boardwalks and cycleways, "lookouts" and "bird hides" and "rehabilitation and enhancement" as an Environmental Offset to the proposed development.

It has not been stated if the Crown foreshore land is proposed to be included in this offset area, though part of the walkway/cycleway and both viewing platforms are proposed to be located on the Crown land. The use of that Crown land does not have the consent of Crown Lands for offsets or for any other purpose.

4. Public Access to the Crookhaven estuary foreshore.

The assertion that there is virtually no public access to the foreshore in the Crookhaven estuary in incorrect. There is ample public access to the Crookhaven estuary from Greenwell Point (via Crown and Council cleared foreshore and public facilities), Orient Point (Crown vegetated foreshore with boating facilities), Culburra and Pyree (Crown vegetated foreshore).

Approximately 4750 metres of accessible public foreshore is available in the Crookhaven estuary downstream of Culburra Road. Upstream of Culburra Road a further 7900 metres of Crown foreshore allows access to Crookhaven River and Crookhaven Creek, which are also widely used recreationally.

Of the 3000 metre foreshore park noted in the revised Plan, around 2400 metres of the foreshore interface is Crown land which can currently be accessed by the public from the western end of the existing Culburra Beach township.

An appreciation of the estuarine environment of Curley's Bay and the Crookhaven estuary including the foreshore environment is also available through the use of small trailer boats and personal water craft within Curleys Bay, which is popular with both locals and visitors.

End Attachment A

Attachment B

West Culburra Mixed Use Concept Plan (MP 09_0088)
Comment on the Response to Submissions Report
Comment by Fisheries NSW

Fisheries NSW has reviewed the Response to Submissions Report (RTS) by John Toon Pty Ltd (dated October 2013) and associated reports including the Water Cycle Management Report, Water Quality Monitoring Plan and the Estuarine Management Study provided by the applicant.

Fisheries NSW notes that several issues which were originally of concern (developments within the riparian buffer zone, the "leisure hub" and associated waterfront infrastructure at the western end of the site) have been addressed to some extent. Nevertheless, the proposed development will continue to have some direct impact upon fish habitats (such as the proposed clearing of mangroves for "vistas" and "leisure hub"). The Crookhaven River estuary supports important fish habitats and is widely used for oyster production and recreational and commercial fishing.

However it is the potential for significant indirect impacts upon fish habitats and oyster farms within the Crookhaven River estuary due to water quality decline that is the most serious concern to Fisheries NSW.

Fisheries NSW policy is that all developments should aim to achieve "no nett loss" of Key Fish Habitat. Fisheries NSW also supports the aims and requirements of SEPP 62 (Sustainable Aquaculture) which include ensuring that developments do not have adverse impacts on oyster aquaculture in the vicinity of the development.

Fisheries NSW is not convinced that the proposed development can be carried out with no significant impact upon the fisheries values of the Crookhaven River estuary.

Outstanding issues are discussed in sections below.

Integrity of the 100 metre riparian buffer zone.

It is acknowledged that the proposal includes a 100 metre riparian buffer between the Crookhaven River and most of the residential development. It is further acknowledged that the number of ancillary developments within this buffer has been scaled back and that it will now be better able to perform its intended function. However, the proponents have re-confirmed their intent to clear parts of the buffer right down to the shoreline to create "vistas" and establish a "leisure hub" at Cactus Point. These will compromise the effectiveness of the buffer.

It is the opinion of Fisheries NSW that creation of vistas does not justify clearing of riparian vegetation which has a valuable ecological function to perform – viz. the filtering of sediments and nutrients emanating from the development site and stabilising and protecting the shoreline from wind and wave erosion.

With regard to the "leisure hub" at Cactus Point, Fisheries NSW reiterates the fact that the waterway adjacent to Cactus Point is a shallow intertidal mud flat which is inherently unsuited to the vast majority of waterway-based recreational uses. There is little justification for clearing riparian vegetation at the site as it will continue to remain an unattractive location for leisure activities other than possibly canoeing/kayaking at high tide (see Figure 1). Contrary to the statements in the RTS (Section 3.11) that the "area is open grassland which runs right down to the water's edge" there is in fact a more or less continuous 20 to 40 metre wide remnant buffer of vegetation which could be easily enhanced and regenerated (see Figure 2).

Figure 1 - Crookhaven River estuary in the vicinity of Cactus Point showing shallow mudflats exposed by the falling tide.

Figure 2 - Cactus Point showing more or less continuous fringe of riparian vegetation 20 to 40m wide contrary to the proponent's claim that it is "open grassland which runs right down to the water's edge".

Finally, the Sediment and Erosion Control Plan prepared by Martens and Associates (Sheet SK207 dated 9/10/2013) continues to depict Earth Diversion Bunds within the buffer zone. Construction of such bunds will necessarily entail substantial earthworks and clearing of existing vegetation which will compromise the effectiveness of the buffer at filtering sediments and nutrients emanating from the development site. Indeed such earthworks will create an additional source of sediment close to the waterbody during the construction phase.

In summary, the integrity of the riparian buffer zone is unnecessarily compromised by poorly justified components of the development proposal and further modifications to the proposal are warranted.

Proposed harm to marine vegetation.

The proposal includes three open grass 'vistas' to create water views of the Crookhaven River. Each is likely to require the clearing of mangroves on or adjacent to Public Water Land. Section 3.10 of the RTS outlines the intent to construct a "low sea wall" at Cactus Point which is also likely to result in harm to marine vegetation.

It is Fisheries NSW policy to not generally approve the removal or trimming of marine vegetation (e.g. mangroves) for aesthetic purposes (e.g. to create water views) for private developments (*Policy and Guidelines 2013,* section 3.2.3.2, pp.20-21). Fisheries NSW also applies a 'no nett loss' habitat policy. For **unavoidable** impacts on key fish habitat an offset is required which includes habitat compensation on a minimum 2:1 basis (*Policy and Guidelines 2013,* section 3.3.3.2, pp.29-30). No offset compensation has been proposed for the loss of marine vegetation.

The marine vegetation along the shoreline of Curleys Bay is a valuable component of the estuary's ecosystem and helps protect the shoreline from erosion. As such Fisheries NSW recommends that either riparian vegetation be retained, protected and managed under an agreed plan or if approved, a compensation plan is prepared in consultation with Fisheries NSW.

Water quality modelling.

The Water Cycle Management Report by Martens Consulting Engineers continues to suggest implausible improvements in water quality as a result of the development (see Tables 7, 9, 10, 11). These all suggest substantial reductions in Total Suspended Sediments (TSS), Total Phosphorus (TP) and Total Nitrogen (TN) between the pre-development and post-development scenarios resulting from MUSIC modelling outputs. Section 4.6.1 states that the "water quality discharged to the Billys Island inlet will be of better quality than that currently being discharged". Similarly, sections 4.6.2 and 4.6.3 make similar claims with respect to water discharged to seagrasses and oyster leases.

These predictions and claims are simply not supported by the available evidence. The development site is predominantly native eucalypt forest with just a small area of grazed grassland. The sediment and nutrient export rates from the native eucalypt forest are likely to be extremely low given its largely undisturbed condition. The sediment and nutrient export rates from the grazed grassland will be higher but this area is a small percentage of the total development site and the overall contribution from this area would be small. By contrast, sediment and nutrient export rates from the developed site will be very high especially during the subdivision and dwelling construction phases.

The MUSIC modelling undertaken by Martens only assesses the pre-development and post-development scenarios. It neglects to assess the "during development" scenario when most of the vegetation clearing and soil exposure will take place. This is despite Fisheries NSW officers emphasizing the fact that the development phase is the highest risk period which needs to be assessed.

The development is proposed to be conducted in five stages and each stage could conceivably take 4 to 6 years to complete (Section 2.10 of the Water Quality Monitoring Plan suggests that each stage should be considered complete when 70% of lots have been built on). Therefore it is not unreasonable to expect a 20 to 30 year development phase. The risk of experiencing several large rainfall events per year which overwhelm the sediment and erosion controls and transport sediments and nutrients beyond the development site and into the Crookhaven River estuary is very high.

There are several possible reasons why the MUSIC modelling has produced such implausible results:

- The assumptions about sediment and nutrient export rates under the pre-development and post-development scenarios could be unrealistic. It could be that the export rates for the pre-development scenario are too high and export rates for the post-development scenario are too low. The proponents have not gathered data on export rates from the site under current conditions so it is not possible to validate the assumed rates adopted in the modelling.
- Section 4.3.3 of the Water Cycle Management Report indicates that 1964 to 1970 climate data has been used for the modelling. This appears to be grossly inadequate from two perspectives – (i) it is over 40 years old, and (ii) it is only a 6-year period. As indicated above, the development phase is likely to extend over 20 to 30 years and the subdivision and dwellings will remain in place for decades thereafter. It therefore seems unreasonable to base water quality impact predictions upon just 6 years of 40-year old data. It is likely to be a very poor representation of the climate variation that is likely to occur at the development site if it were to be approved.

It is the view of Fisheries NSW that the water quality modelling and predictions are highly questionable and should not be used for the decision making process without first being independently assessed and verified.

Water quality objectives.

Section 4.2 of the Water Cycle Management Report discusses the water quality objectives. It advances 2 separate objectives:

(i) a Neutral or Beneficial Effect (NorBE), as well as

(ii) Treatment Train Objectives as given in the Shoalhaven City Council Draft Development Control Plan which aim to capture 90% of Gross Pollutants, 85% of TSS, 65% of TP and 45% of TN.

The discussion implies that these two objectives are complementary. In reality, the Treatment Train Objectives in the DCP are a much lower standard than the NorBE objective.

The NorBE objective is quite clear – the water quality emanating from the site after the development commences should be at least as good as the water quality emanating from the site before the development commences.

The NorBE objective is the only valid objective for this site given the sensitivity of the adjacent waterway.

Design of water quality controls.

Additionally, Fisheries NSW could find no reference to the recurrence interval rainfall event that has been adopted for determining the size of sediment basins and earth diversion bunds. What ARI standard have they been designed to? Section 5.4 of the Water Cycle Management Report indicates that iterative modelling was used to determine catchment areas required to mimic the outflows occurring during the pre-development hydrological regime. However, this fails to recognise that the water quality is likely to be much poorer during and post development and therefore much larger basins will be required to contain polluted stormwater.

The Sediment and Erosion Control Plan (Sheet SK207) depicts earth diversion bunds extending across subdivision roads and housing allotments. Obviously these can only be retained during the preliminary phases of the subdivision construction phase. They will need to be removed when it comes time to construct the roads and allotments meaning they will not be able to perform any water quality improvement function for the remainder of the development period.

Experience of water quality decline at other subdivision sites.

Fisheries NSW reiterates its view that it is unconvinced that a subdivision of over 600 lots and 600 dwellings could be constructed on the site whilst achieving a NorBE outcome for water quality in the Crookhaven River estuary in the absence of very substantial water quality offsets. The vegetation clearing and soil surface disturbance necessary to construct the road/street layout, install water, sewerage and power infrastructure and construct dwellings is very substantial and will extend over many years (probably several decades). During that time it is inevitable that the area will be subject to heavy rainstorms causing surface runoff which overwhelms the erosion and sediment controls and transports sediments and nutrients into the Crookhaven River estuary. There are numerous examples of where this has occurred in the past. Photos of the water quality controls at similar development sites being overwhelmed during heavy rainfall events are included here (see Figures 3 – 10).

Figure 3 Sediment controls associated with a housing subdivision under construction being overwhelmed during a rainfall event (Elambra Estate near Gerringong).

Figure 4 Highly turbid stormwater emanating from a housing subdivision under construction during a rainfall event (Elambra Estate near Gerringong).

Figure 5 Sediment controls associated with a housing subdivision under construction being overwhelmed during a rainfall event (Elambra Estate near Gerringong).

Figure 6 Highly turbid stormwater discharging from a housing development under construction at Narooma.

Figure 7 Highly turbid stormwater within Wagonga Inlet (Narooma) resulting from the flow shown in Figure 6.

Figure 8 Highly turbid stormwater discharging from a housing development under construction at Albion Park.

Figure 9 Highly turbid stormwater discharging from a housing development under construction at Albion Park.

Figure 10 Highly turbid stormwater from a housing development under construction overwhelming a sediment fence.

It is the view of Fisheries NSW that the only way that the NorBE objective can be achieved is to incorporate additional and substantial water quality improvement offsets (such as stock exclusion fencing, mangrove planting, bank erosion control) throughout the wider Crookhaven/Shoalhaven estuary.

Adequacy of the proposed Water Quality (WQ) Monitoring.

Water Quality (WQ) Monitoring proposals are outlined in the WQ monitoring Plan prepared by Martens and Associates. Section 2.2 outlines the elements of the WQ monitoring approach. It states "due to the high variability of stormwater quality, direct sampling and testing of runoff from the site is not recommended as the sole method of site monitoring". The Plan then eschews any stormwater quality sampling in favour of groundwater, estuary, shellfish, SQID and secondary indicator monitoring. There is no explanation as to why "high variability of stormwater quality" would preclude stormwater sampling. Variability is not a factor if the objective is simply to detect failures of the water quality protection regime. It is a simple process to establish thresholds for each of the relevant parameters (based on results from pre development sampling) and then relate sampling results to the thresholds.

Fisheries NSW is of the opinion that stormwater sampling and testing is absolutely essential. Stormwater sampling is the only means by which the performance of the sediment and erosion controls implemented across the site can be verified.

The proposed estuary WQ monitoring is a very poor substitute for direct stormwater quality sampling and testing since impacts attributable to the development will be obscured and masked by impacts from the wider Shoalhaven and Crookhaven catchments. It is highly likely that estuary WQ monitoring would fail to detect any water quality decline resulting from the development even if those impacts were significant.

The sampling frequency of the proposed estuary WQ monitoring is also likely to contribute to its failure to produce useful results. The vast majority of water quality decline will occur during infrequent rainfall events. Monitoring needs to be targeted to those times. Regular periodic sampling is ineffective since the sampling times rarely if ever correspond with the rainfall events that cause the impacts.

To establish a robust WQ monitoring regime there also needs to be pre-commencement monitoring of water quality at the site and use of reference or control sites.

The proposed SQID and secondary indicator monitoring is not actually water quality monitoring at all. It is merely a maintenance needs assessment schedule.

In summary it is the view of Fisheries NSW that the proposed WQ sampling is inadequate and would consistently fail to detect water quality impacts due to the development even if they were frequent and substantial. This would mainly be due to sampling times failing to coincide with runoff events and impacts not being able to be distinguished from wider catchment sources.

It is the opinion of Fisheries NSW that the proposed Estuary WQ monitoring is not statistically powerful enough to distinguish impacts resulting from the development from general background variation in water quality in the estuary and is a waste of time and money in this context.

Conclusions and Recommendations.

Fisheries NSW is not prepared to recommend conditions of approval at this stage as in our opinion the questions relating to water quality objectives and the achievability of those objectives over the 20 to 30 year development construction phase and subsequently during the dwelling occupancy phase have still not been satisfactorily answered.

Fisheries NSW strongly recommends that the Department of Planning & Infrastructure seek independent assessments of:

1. The robustness of the water quality modelling and predictions and likely achievability of a NorBE water quality objective with particular focus upon the high risk "during development" (or construction) phase.
2. The adequacy of proposed WQ treatments including the sizing, location and likely performance of sediment detention basins and swales.
3. The adequacy of the proposed water quality monitoring regime and its robustness in terms of being able to detect water quality decline resulting from the development over a long period of time.

If such independent assessments prove favourable to the development proceeding, then additional requirements would include:

4. Stormwater sampling and testing to verify predictions about stormwater quality and effectiveness of controls and to provide feedback to site managers in relation to erosion and sediment controls.
5. Regular, independent audits of water quality measures to provide reassurance that controls were being properly implemented and maintained.

End Attachment B

Attachment C

West Culburra Mixed Use Concept Plan (MP 09_0088)
Comment on the Response to Submissions Report
Comment by NSW Office of Water

Foreshore Buffer Zone

The Office of Water acknowledges that the concept plan has been modified so as to exclude, for example, water quality control structures and various other structures/uses from the 100 metre foreshore buffer. Such modifications address a number of issues raised and will contribute to greater protection of riparian values on the subject site and are supported by the Office of Water. Opportunities described to rehabilitate and enhance the natural values of the foreshore buffer zone are also supported.

However, the Office of Water maintains the position that proposals to clear riparian foreshore areas to establish water vistas is inappropriate and inconsistent with the Guidelines for Controlled Activities on Waterfront Land (2012). Clearing of foreshore vegetation will reduce the integrity of the foreshore and expose the foreshore to further effects and pressures as described in the Estuarine Management Study by Martens. Mitigating such effects will require ongoing management, resources and (likely) further undesirable interventions within the riparian zone.

Crookhaven River foreshore development

The Office of Water reiterates previous concerns in regard to expectations which may be created by the proposed foreshore development on the Crookhaven River foreshore. As the waterway fronting the site is shallow and tidal, improving access to the waterway via a boat ramp and jetty may create the expectation for more substantial boating activities.

Such expectations may lead to future requests for dredging to create a more functional water depth which would be particularly undesirable in the Crookhaven estuary, given the presence of acid sulfate soils and the potential to impact on the natural values of the estuary, water quality, and the oyster industry among other things.

Water quality impacts

The Office of Water concurs with NSW Fisheries' concerns in regard to water quality risks to the Crookhaven River foreshore and estuary, most particularly during the construction phases of the Project. Construction of the project is indicated to occur for many years.

Despite the adoption of best management practices, risks to water quality of receiving waters will remain a constant threat as even best management practices are subject to design, construction and management thresholds which may be exceeded. When such thresholds are exceeded, impacts to some extent will occur on downstream receiving waters and water users.

End Attachment C