

Lake Wollumboola Protection Association Inc

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The Secretary Department of Planning and Environment,
320 Pitt St
Sydney NSW 2000

Attention: Robert Byrne
robert.byrne@planning.nsw.gov.au

Dear Sir,

4th August 2017.

**West Culburra Mixed Use Concept Plan now State Significant Development 3846.
Concerns regarding the applicant's Supplementary Response to Submissions July 2017.**

The Lake Wollumboola Protection Association Inc is a Culburra Beach community environment group whose members have been active since 1993 in initiatives to protect Lake Wollumboola and its catchment and the character of Culburra Beach and surrounds.

We opposed the West Culburra mixed use Concept Plan in our original submission in 2013. We also wrote to the then Secretary of the then Department of Planning and Infrastructure 13th March 4014 expressing concern that the proponent's initial Response to Public Submissions did not appropriately address many of the issues we raised.

We continue to object to the proposal and consider that once again important objections have not been appropriately addressed. Our objections stand despite proposed changes to the Concept Plan.

The attached assessment of the applicant's **Supplementary Response to Submissions July 2017 (JT Response)** follows the order of the Director General's Requirements of July 2010 rather than the Supplementary Response to facilitate consideration of the issues of concern to us.

After initial review of the documents uploaded to the Department's website on 20th July, I found that the following key documents identified in the JT Response were not provided:

- Water cycle Management Report. Mixed Use Subdivision West Culburra. Martens November 2016.
- Water quality Monitoring Plan Mixed use Subdivision West Culburra Martens November 2016.
- Estuarine Process Modelling Report Martens 2016.

As these complex documents were not available until late in the 2-week exhibition period, it has not possible to review them as part of this submission.

Accordingly I will give further consideration to the need for any amendments to our submission attached and advise.

Frances Bray PSM B Ed Dip Ed
President
Lake Wollumboola Protection Association Inc

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Lake Wollumboola Protection Association Inc updated advice regarding the response to issues we raised previously, concerning the West Culburra proposed mixed use SSD 3846

This submission identifies key issues raised in our previous submissions which are not appropriately addressed in the "Supplementary Response to Submissions, July 2017. (titled the "JT Response" throughout our submission)

A. Non-compliance with Director-General's Environmental Assessment Requirements. 8th July 2010.

General requirements

We do not consider that General Requirements **4 and 5** have been met as follows:

It is likely that development proposals for the Tourist Hub at Cactus Point and recreational infrastructure in the SEPP 14 Wetlands are in conflict with the SEPP 14 Coastal Wetlands and SEPP 71 the Coastal SEPP as well as related provisions in the draft Coastal Management SEPP 2017.

The JT Response claims that "All the land the subject of the concept plan is in excess of 100m from the coast." However descriptions in the JT Response and accompanying documents show that much of the proposed foreshore park development is within 100 m and in any case assessment under both SEPP 14 and SEPP 71 is justified.

It is also considered that the application is not consistent with the Objects of the Environmental Planning and Assessment Act, particularly in relation to object 1 a (i, regarding proper conservation of natural resources, 1 (vi, regarding protection of the environment etc and (vii regarding the principles of ecologically sustainable development, particularly the precautionary principle, conservation of biodiversity and ecological integrity and intergenerational integrity.

We do not consider that General requirement 4 "consideration of any relevant statutory and non-statutory provisions etc" applies with regard to the South Coast Regional Strategy has been met as discussed further.

Nor are the Key Issues requirements regarding **Strategic Planning 1.1 and 1.2.**

1.1 requires justification with reference to relevant local, regional and State Planning Strategies including any inconsistencies.

1.2 requires "Demonstrated consistency of the proposed subdivision with the South Coast Regional Strategy (as well as the recommendations resulting from the South Coast Sensitive Urban Lands Review, NSW Coastal Design Guidelines and NSW Coastal Policy.)"

Misrepresentation of independent Inquiries and NSW Government Planning policy decisions.

In our view the JT Response misrepresents recommendations of related independent Inquiries and their adoption by NSW Governments.

The 2007 NSW Government South Coast Regional Strategy (SCRS) adopted the recommendations of three independent Inquiries as the basis for environment protection and future

zoning for urban and other development in the Culburra Beach area in the revised Shoalhaven LEP via a s117 Ministerial Direction.

These recommendations include:

- the recommendations of the Long Bow Point Commission of Inquiry into the 837 lot Long Bow Point subdivision the first of 6 development stages in the so-called Culburra Urban Expansion area that the then Minister for Urban Affairs and Planning refused because of the likely impacts on Lake Wollumboola and the environmental values of the area. He also agreed that a review of landuse zones for the entire CUEA should be undertaken.
- the recommendations of the NSW Coastal Lakes Inquiry, which included "Comprehensive Protection for Lake Wollumboola"

The JT Response fails to mention these Inquiries and their recommendations which were adopted in the SCRS as Government policy.

The JT Response does however refer to the subsequent South Coast Sensitive Urban Lands Review 2006, (SCSULR) which drew on the recommendations of the previous enquiries with its recommendations adopted in the NSW Government's in Appendix 2 of the SCRS.

The SCSULR recommendations for the Culburra Urban Expansion Area area are as follows:

- "Land within the catchment of Lake Wollumboola is considered unsuitable for urban development, principally on the grounds of the potential negative impacts on the Lake which is a sensitive intermittently closing and opening lake or lagoon (ICOLL)."
- The remaining land within the catchment of the Crookhaven River is considered suitable for limited urban development.
- "The land in the Lake Wollumboola catchment should be zoned for conservation purposes (the most appropriate zone under the Standard Instrument for LEPs is zone E1 National Parks and Nature Reserves.)"
- "Negotiations should be commenced with the landowner to determine their interest in dedicating the land in the Lake Wollumboola catchment for conservation purposes and including the sites as a potential bio-banking site."

The JT Response acknowledges on Page 15 that, "The South Coast Regional Strategy is the principal document shaping planning policy for the land covered by the Concept Plan."

However the JT Response omits the requirements as underlined for "limited development in the Crookhaven catchment" and "E 1 National Park zoning for the lake catchment" referring only to the first requirement, that land in the lake catchment is unsuitable for urban development.

Accordingly we consider that key features of the revised West Culburra Concept Plan contravene the DGRs regarding consistency with the South Coast Regional Strategy 2007.

These features include;

1. Urban development proposals in the Lake Wollumboola catchment including:

- 46 residential lots south of Culburra Rd and west of the existing Retirement Village.
- the proposed sports oval and constructed wetland in the head waters of Downs Creek, the main creek draining the lake's north west catchment.
- parts of the proposed industrial area.

- the proposed roundabout on Culburra Rd in the head waters of Wattle corner Creek catchment.
- road incursions.

2.The extent of development proposed in the Crookhaven catchment is not consistent with "limited development," as it includes all of the residential and 50% of the industrial zoned land in the "Culburra Urban Expansion Area."

3.Parts of the proposed biodiversity banking/certification offsets are not proposed for the lake catchment.

Furthermore, we consider that the proposed development expansions in the Lake catchment are inconsistent with numerous policy commitments by Ministers for Planning since the endorsement of the South Coast Regional Strategy that the Lake Wollumboola catchment is unsuitable for urban development and should be zoned for environment protection in the Shoalhaven LEP. These commitments were maintained throughout the Shoalhaven LEP process including the 2011 and 2013 exhibited draft SLEPs and Ministerial statements to the present. (Ministers Stokes and Roberts.)

Furthermore the proposed development in the Lake Wollumboola catchment is inconsistent with the Illawarra Shoalhaven Regional Plan of November 2015 as well as the Director General's requirements for the Halloran Planning Proposal also November 2015.

The Illawarra Shoalhaven Regional Plan of November 2015 makes special mention of the Culburra Beach area following on from the South Coast Sensitive Urban Lands Review.

At Page 56 in the section referring to " Sensitive Estuaries" and protecting sensitive urban lands in the Shoalhaven the Regional Plan says,

"The Culburra Beach site contains land within the catchment of Lake Wollumboola. This lake is considered an ecological jewel that must be protected."

It goes on to refer to the lodgement of the Halloran Planning Proposal 2014 and further states that, "The lands within the catchment of Lake Wollumboola are considered unsuitable for urban development because of potential negative impacts on the lake, which is a sensitive, intermittently closing and opening lake with very high conservation values."

The NSW Government has also completed a joint agency study entitled "The Environmental Sensitivity of Lake Wollumboola" 2013 which specifically warns against impacts of development expansion in the lake catchment. See Water Cycle Management Section.

The Illawarra Shoalhaven Regional Plan also states that,

" The outcomes and recommendations of the Sensitive Urban Lands Review and the joint agency study will guide protection and conservation of the Lake Wollumboola catchment and future land use planning decisions such as that for the Culburra Beach site."

Clearly this policy applies to the areas of the Lake Wollumboola catchment both south and north of Culburra Rd and included in the West Culburra SSD application.

Yet the JT Response makes no mention of these policy directions by the NSW Government for the Lake Wollumboola catchment.

Clearly also this policy applies to the Long Bow Point area, recognised as the most sensitive part of the lake catchment owned by the Halloran Trust.

Accordingly we consider that exclusion of the Long Bow Point area from the Biodiversity Offset arrangements is inconsistent with all of these policy statements.

Further confirmation of Government Policy is stated in the Determination for the Halloran Planning Proposal, November 2015.

However the JT Response misrepresents the Gateway approval of the Halloran Planning Proposal including the maps.

References in the JT Response are to the Halloran Trust/SCC proposal, not to the approval and requirements as stated in the Department of Planning and Environment's Determination for the Halloran Planning Proposal in November 2015. These omissions by the JT Response put the West Culburra DA in a more favourable light than is implied in Government policy.

The Determination Requirements modified the proposed zonings make clear that:

- "Council is to zone Long Bow Point" (described as a South coast jewel in the Departmental media release) "for environment protection due to the recognised high environmental sensitivity of Lake Wollumboola dependent on the outcomes of a biodiversity offset strategy." (We consider "environment protection refers to E 1 or E 2 zoning.
- "Land within the surface and ground water catchment of the Lake (north of Culburra Rd) should also be zoned for environment protection, unless the water quality strategy identifies that an alternate zoning can achieve a neutral or beneficial effect on the Lake."

We also understand that the zoning of the lake catchment land south of Culburra Rd and included in the West Culburra SSD application "is to be zoned for environment protection, unless the water quality strategy identifies that an alternate zoning can achieve a neutral or beneficial effect on the Lake." See later references to lack of assessment of impacts on Lake Wollumboola.

In addition, the DGRs for the Halloran Planning Proposal require a study to establish the surface and ground water catchment boundary between the Lake Wollumboola and Crookhaven River catchments, particularly in relation to the sensitivity of Lake Wollumboola to pollution of groundwater as demonstrated in the Joint Agency Report "The Environmental sensitivity of Lake Wollumboola" 2013, as the basis for future zoning decisions as part of the Halloran PP process.

The West Culburra SSD thus conflicts with the DGRs for the Halloran Planning Proposal by retaining proposed development in the Lake Wollumboola catchment.

The JT Response has not addressed our concerns that alternative sites to development in the Lake Wollumboola catchment have not been considered.

Application of the precautionary principle requires that alternatives to proposals likely to cause damage to the environment are considered.

As previously proposed we consider that two alternative sites have the potential to reduce the environmental impacts on both the Lake Wollumboola and Crookhaven River catchments.

The first site in the Crookhaven catchment is located north of Culburra Rd between the Culburra Beach Ambulance Station and the existing industrial area, opposite the existing community facilities. Part of this area is currently zoned for commercial development as part of a future town centre. However the current zoning does not allow housing.

The JT Response acknowledges that the current area zoned for commercial development is too large and foreshadows plans for medium density housing together with commercial development for this area.

The JT Response also refers to a road to link to the existing urban area for part of this site.

Other parts of this area are included in the application as a cleared vista park.

We previously proposed consideration of parts of this site for a mixed commercial/business centre to include medium density housing, and retention of areas of native vegetation as public parkland.

Locating medium density housing on the northern side of Culburra Rd would satisfy the need for medium density housing near the town centre without the proposed expansion of residential development south of Culburra Rd in the lake catchment. (particularly as this site is adjacent to the old tip currently in use in relation to road works.)

The potential for the area north of Culburra Rd to provide a new centre for Culburra Beach would more appropriately be considered as part of the Halloran Planning Proposal. However consideration of the West Culburra application should not preempt this possibility by approving development south of Culburra Rd in the lake catchment.

The second alternative site is located north of Culburra Rd to the west of the land zoned for urban development. It is entirely within the Crookhaven River catchment and most of the site is cleared. It is already under consideration as part of the Halloran Planning Proposal.

Whilst this site is separated from the existing Culburra Beach footprint, limited development there as per the South Coast Regional Strategy/Sensitive Urban Lands Review recommendations would have less impacts on the Crookhaven River environment as this area is already mainly cleared of native vegetation.

The third alternative is to move the sports oval to within the development footprint. See later comments.

B. Subdivision Design, Layout and Desired Future Character inconsistent with NSW Coastal Design Guidelines.

In our previous submissions we raised a series of concerns about the overall design of the West Culburra proposals and the relationship to the character of Culburra Beach. It seems that whilst some of these concerns have been considered, they have not been accepted.

They continue to be valid especially in the context of the NSW Coastal Design Guidelines. The DGRs require consistency with these Guidelines. At Page 16 the JT Response advises that in consultation with the Department of Planning and Environment decisions have been made to delete unnecessary detail.

As a result of these decisions and the failure to provide updated maps it is difficult to comment on the extent to which the proposal now meets the DGRs.

Ongoing issues with Coastal Design are listed below:

- The extent of new development proposed in the Crookhaven catchment is extensive, taking up all the 2 c zoned land. It is not "limited" development as required by the South Coast Regional Strategy. It constitutes ribbon development along the Crookhaven River inconsistent with NSW Coastal Design Guidelines.
- As indicated previously the proposal continues to include urban development expansion in the Lake Wollumboola catchment.
- The topography of Culburra Beach, surrounded as it is by the ocean, Lake Wollumboola and the Crookhaven Estuary mitigates against integration between the existing urban area and the proposed development to the north west of the existing town. The existing industrial area and the sewerage treatment works effectively define Culburra's boundary and would separate the existing and new development.
- No amount of bus routes and cycling paths including along Culburra Rd would reduce car dependency given the distances involved. Current beach car parks cannot cope now with the summer influx, let alone thousand of additional residents.
- It is surprising that the proposal for a local commercial and medium density housing area, called the "Circus" has been deleted from the proposal as this would have provided services within the residential area, reducing reliance on the existing Culburra Beach town centre and on car travel.
- Visual Impact. The proponent seems intent on changing the quality of the visual impact of native vegetation on Culburra Beach. It is our understanding that most residents, ratepayers and regular visitors and tourists, value the low rise character of Culburra Beach surrounded by coastal forest and the ocean, Crookhaven River and Lake Wollumboola. Culburra Beach is the classic low key Australian coastal village and we do not want its character diminished by over-development and loss of precious native vegetation.
- 75 hectares of land identified in the JT Response as regrowth that is nearly 100 years old will be cleared, suggesting that its habitat values are higher than what is indicated in previous assessments.
- The proposal does not provide for green corridor spaces within the subdivision areas, relying instead on the proposed foreshore park (public land) and oval proposed in the lake catchment as space for active and passive recreation. The oval should be located within the development footprint to encourage a wide range of uses not on the margin.

- The proposal continues to propose "Vista parks" constituting large areas, cleared of native vegetation including mangroves and woodland to achieve views. Such clearing would be incompatible with the existing character of Culburra Beach and is understood to be illegal. See later comments.

Issues with changes to Development proposals.

Changes in the Lake catchment include:

- medium density development south of Culburra Rd between the existing Retirement Village and the decommissioned tip, which is in use again servicing current road works.
- part of the Industrial Estate, a missed opportunity to exclude urban development from the lake catchment.
- roundabout in the headwaters of Wattle Corner Creek.
- Road widening, bike paths affecting both Wattle Corner and Downs Creeks on Culburra Rd.
- Sports oval-this area appears to involve an expansion of development in headwaters of Downs Creek in the lake catchment, with a larger water pollution control pond.

As previously mentioned in this and previous submissions we object to urban development proposals in the Lake Wollumboola catchment because of the threat they represent to both surface and ground water quality of the creeks, wetlands and Lake Wollumboola and its highly sensitive internationally significant ecology. We also object to the likely impacts on the conservation values of the catchment including Threatened Species and Endangered Ecological Communities.

It seems that no assessment has been undertaken of the cumulative impacts on Lake Wollumboola, its creeks, wetlands and catchment from urban pollution including nutrient and sediment enrichment and chemical pollutants. **See section regarding water quality.**

Concerns with proposals for the Crookhaven Foreshore Area.

We previously raised objections to parts of the proposal located in the Foreshore Area including impacts on the SEPP 14 Wetland and area zoned 7 (a) Environment Protection in the Shoalhaven LEP. These areas include the Foreshore Park and the proposed Leisure Hub at "Cactus Point."

We consider that the recreational uses proposed for the SEPP 14 Coastal Wetland are not permissible. Furthermore the 2017 Draft Coastal Management SEPP proposed an additional 100 m perimeter area around existing SEPP 14 Wetlands that would further restrict development. At this location.

Cactus Point.

It seems that the Cactus Point Hub proposal has been amended in a minor way in response to submissions, including our own, by reducing boating infrastructure on the banks of the Crookhaven River.

However the uses proposed for the so-called Tourist Hub include motels, restaurants, cafes and tourist-oriented shops which that would have significant impacts on the riverbank, wetlands and Aboriginal cultural heritage. These uses are inconsistent with the current zonings for the area.

The JT Response justifies the tourism values of this site by claiming that the presence of Aboriginal middens shows its value as "an ideal location for leisure activities."

These remarks are in our view insensitive to the Jerrinja community and their cultural heritage. Figure 11 "The location of Aboriginal Middens along the Crookhaven Foreshore" indicates that there as at least 7 middens in the immediate Cactus Point Area.

These middens are largely undisturbed due to their current location, isolated from urban areas.

The JT Response acknowledges the need to protect the middens but merely suggests this be achieved by "interpretive signage and exhibits of any artifacts."

Such measures are token measures, inadequate in protecting these sensitive middens from the recreational uses, parking areas and roads associated with tourism development.

Other midden sites are located within the foreshore reserve area and likely to be degraded by users of the proposed Foreshore walking track. See later comments.

Foreshore walking track.

In our previous submissions we objected to the location of the walking track within the SEPP 14 Wetland and Crown land and Foreshore zoned 7 a Environment Protection, as well as the location of water pollution control measures in the area.

Several changes appear to have been made in response to concerns by us and Government Agencies. These include removal of the water pollution control measures from the foreshore area as well as some of the active infrastructure and creating a 100m woodland buffer.

However the maps now provided are the same as those exhibited previously, so it is difficult to ascertain the changes. Also the maps fail to do show the route of the walking track in relation to the Crown Land, the SEPP 14 and 71 boundaries and the 7 a Environment Protection Zone.

It seems however that the proposed walking and cycle track, key vantage points, interpretive panels are still to be located within the 7a zone, with the children's play areas, viewing platforms, shelters, barbeques, exercise equipment all located within the foreshore park or in close proximity.

There appears to mixed messages about location in the 7a zone/SEPP 14 Wetland with Page 9 suggesting they are outside these zones and Page 23 stating the cycle/walkways are "aligned through the foreshore reserve and proceed through the Mangrove Forest."

Therefore we remain concerned about the exact location of the walking track and its associated infrastructure.

The impacts of construction of the substantial infrastructure proposed within these sensitive zones has not been assessed. In particular the potential for disturbance of acid sulphate soils has not been considered despite this being a requirement of the DGRs at 6.3.

There is no assessment either of the impacts of increased population and use of the foreshore park/walking/bike track on the health of the Wetlands.

Water Cycle Management. Part 7 DGRs

Part 7 of the Director General's requirements sets out details for an Integrated Water Cycle Management Strategy including Stormwater management based on Water Sensitive Urban Design principles. This must address direct and indirect impacts on quality of surface and ground water and the surrounding environment (including Lake Wollumboola, the Crookhaven River, riparian area and the SEPP 14 wetlands, drainage and water quality controls for the catchment and erosion and sedimentation controls at construction and operational stages etc.)

Subsequently the Department of Planning and Environment specified that the proposal was to "demonstrate a neutral or beneficial effect (NorBE) on the Crookhaven Estuary, SEPP 14 Wetlands and Lake Wollumboola."

Surface water.

We maintain our previous concerns that it is most unlikely that a development of this scale and causing loss of **75** hectares of woodland forest up to 100 years old, would not have impacts on the adjacent SEPP 14 Wetlands and the Crookhaven Estuary as is claimed.

We do not consider that our previous concerns have been appropriately addressed.

Lake Wollumboola catchment.

With regard to the Lake Wollumboola catchment, the area of development continues to be located in the lake catchment including areas identified as sensitive to water quality impacts. These areas include:

- the SEPP 14 Wetland in the north west bay of Lake Wollumboola where medium density housing south of Culburra Rd would be in close proximity.
- the headwaters of Downs Creek the major stream in the north west catchment where the proposed oval and constructed wetland are proposed.
- the headwaters of Wattle Corner Creek due to the proposed roundabout.
- Impacts on both creeks from road changes.
- Wattle Corner Creek catchment due to parts of the industrial area with potential for chemical pollutants as well as nutrient enrichment and sedimentation.

With regard to the site of the proposed oval, we note that the map as Figure 3 provided in the Eco Logical Biodiversity Offset Assessment identifies the south east portion of the site as "Potential EEC." This is likely to correspond with what we understand to be a hanging swamp in this headwaters of Downs Creek.

This is not mentioned in any of the assessments.

Accordingly we have an even stronger objection to the proposed location of the sports oval.

The only mention that we could find of water quality assessment of potential impacts on Lake Wollumboola, was in relation to the proposed oval and this was scant on detail.

Otherwise in the short time available for consideration of the documents we consider that the proposal does not meet the DGRs with respect to the Lake Wollumboola catchment.

Key documents were not exhibited until 1-2 August making it impossible to assess them prior to the 4th August deadline. The documents include;

- Water Cycle Management Report, Mixed Use Subdivision, West Culburra Martens November 2016.

- Water quality Monitoring Plan Mixed Use Subdivision West Culburra Martens November 2016.
- Estuarine Process Modelling Report Martens 2016.

At this point it seems that assessments of groundwater impacts have not been provided contrary to 7.5 and 7.6 of the DGRs for "Water Cycle Management."

The "Water Cycle Management Report Addendum: mixed use Subdivision, West Culburra 8th June 2017 and the Eco Logical "West Culburra Aquatic Ecology Impact Assessment: proposed mixed use subdivision May 2017 "report includes commentary that provides some insight into the water quality modelling and proposed water quality protection measures but cannot substitute for the documents themselves.

Accordingly we do not consider that the assessments demonstrate beyond reasonable doubt that the proposal meets the DGRs for NorBE for the Crookhaven and Lake Wollumboola catchments.

We have nevertheless given consideration to the available documents and provide more detailed comments below.

The "Water Cycle Management Report Addendum: mixed use Subdivision, West Culburra" 8th June 2017 advises at Page 4 that, "To address the Department's Peer Review concerns regarding the modelling of storm water, the MUSIC water quality model has been amended to incorporate changes requested by the Peer Reviewer related to the treatment of infiltrated water. The water quality objective has been revised to require that NorBE be achieved at the 7 (a) protection zone boundary."

The Report goes on to advise that:

- "there is no modelling allowance for the treatment of infiltrated water by the vegetation."
- "half of the proposed industrial area has been removed from the modelling" together with other refinements.

As a consequence the Report claims, in reference to the Crookhaven catchment and the environment zone along the shore, that:

"The revised water quality model confirms that the proposed development will have a neutral or beneficial effect on storm water quality at the boundary of the development at the 7(a) zone and therefore at the down slope receiving environments."

From the documents available to us, the Report does not draw a conclusion whether a NorBE would be achieved for the Lake Wollumboola catchment.

The JT Response refers to the Martens Water Cycle Management Report Addendum June 8th 2017 as including modifications to the model and plans that have been made to achieve a NorBE outcome for the treatment train and water quality modelling.

Whilst these changes are clearly aimed at the Crookhaven catchment their applicability to the Lake Wollumboola catchment is not made clear in all cases. See 3.0 Water Quality Modifications P 2.

Treatment changes in 1 and 2 appear to be directed at the Crookhaven catchment.

Modification 3 concerning removal of the wetland/infiltration systems apply to the 7 a zoned woodland but not to the Lake catchment area designated as 06) presumably the Oval site.

Modification 4 refers to removal of 50% of the industrial site from the model and replacement with forest. However it does not specify whether the removal applies to the Crookhaven or Lake Wollumboola catchment portion of the proposed industrial area or in what proportion.

Modification 5 and 6 refer to changes to roof areas and road reserves to increase pervious areas.

Modification 7 applies to the oval and related constructed wetland in the lake catchment, with the wetland size increased to increase water storage capacity to better meet reuse demands.

It is concerning that the mapping provided with the JT Response for the proposed West Culburra development has not been changed to show the revised plans including those likely to impact on water quality issues.

For example the reductions to the Industrial Area are not mapped, so it is unclear whether the 50 % reduction applies to the Crookhaven or the lake catchment. Also the mapping of the Crookhaven Foreshore does not distinguish on one map and with consistent scale, the locations of the Crown Land and the boundary of the West Culburra development site as well as the 7 (a) Environment zoned land.

The absence of revised and clear mapping causes difficulties in identifying where the water quality treatment works will apply.

These changes represent ad hoc adjustments to the modelling and accordingly raise questions regarding the integrity of the modelling and the claims of achieving a NorBE for either the Crookhaven or the lake catchment.

The "Water Cycle Management Report Addendum: mixed use Subdivision, West Culburra" 8th June 2017 Martens focusses primarily on the Crookhaven catchment.

Based on the Reports available to us we have not been able to locate an assessment of surface water impacts on Lake Wollumboola.

Neither have we been able to locate assessments of impacts on Ground Water quality in either catchment.

Therefore we do not consider claims made for a NorBE outcome for either the Crookhaven or Lake Wollumboola catchments have been substantiated.

We also have concerns regarding Water quality issues and Lake Wollumboola that we raised in previous submissions and wish to re-emphasise.

We remain concerned that the data used to calibrate the modelling may not utilize data of nutrient and sediment content of natural runoff from the affected sites and of local meteorological conditions despite the length of time since this application was conceived and approved for consideration,

For example the "Eco Logical West Culburra Aquatic Ecology Impact Assessment: Proposed Mixed Use Subdivision Aquatic Ecology Assessment" 4th May 2017 at Page 19 refers to four scenarios that "are for an 'average' rainfall year (1967) data and use calibrated dispersion coefficients."

Also the "Eco Logical West Culburra Aquatic Ecology Impact Assessment" at Page 8 includes Table 1. Development scenarios and Tuflow modelling, provided by Martens and Associates). This table uses meteorological data for **1967 to 1969**, ie from 50 years ago.

Surely up-to-date rainfall data should be used, taking into account of local changes over time and impacts of climate change on rainfall patterns and on frequency and intensity of major storm events.

The "Eco Logical West Culburra Aquatic Ecology Impact Assessment: Proposed Mixed Use Subdivision Aquatic Ecology Assessment" 4th May 2017 relies on the Martens modelling of future runoff quality of the Crookhaven catchment part of the development.

Consequently doubts about the validity of the Martens modelling also raise doubts about the validity of the Eco Logical findings.

What is known about natural surface runoff from the Lake Wollumboola catchment and likely also for the adjacent Crookhaven catchment is that during low or moderate rainfall conditions there is minimal surface runoff to the water bodies. Furthermore due to the low nutrient soils, derived from the ancient Permian shales, the nutrient loads in the runoff are also very low. The vegetation communities of the site are attuned to these low nutrient, variable natural surface and ground water conditions on the site.

The soils are recognised as highly erodible, once natural vegetation is removed.

Increase in nutrient loads is likely to change the species composition of affected foreshore areas including wetlands, with species dependent on low nutrient conditions depleted and replaced by weed species.

Impacts of nutrient-enriched storm water on native vegetation composition have occurred at Lake Wollumboola in close proximity to the drain near the lake boat ramp picnic area. Environmental weeds and garden escapees flourish here although it is hoped that native plantings by the Green Army Teams will assist in reducing the problem.

Therefore concerns apparently expressed by the Peer Reviewer that NorBE be achieved at the southern margin of the 7(a) foreshore reserve including the woodland and wetland, are justified.

No evidence is so far available to allay our concerns that the Martens modelling and results are based on over-estimation of the natural nutrient loads and under-estimation of increases due to the proposed development and that by adopting these results the "Eco Logical Aquatic ecology impact assessment" conclusions is also questionable.

We acknowledge that "the Crookhaven Estuary for the average rainfall year is frequently above AZECC (2000) trigger criteria for TN and TP in estuaries and is therefore considered a disturbed ecosystem with compromised health in existing conditions" Eco Logical Assessment P17.

We point out also that this has occurred through cumulative impacts of existing both urban expansion and rural industries.

The EA assessment goes on to say that the modelling findings demonstrate that extreme short duration run-off events increase estuarine concentrations of nutrients and TSS even further past ANZECC criteria.

It then concludes that "despite this, the system still supports commercial aquaculture and reasonably healthy marine vegetation." Page 17.

However this conclusion ignores the fact that oyster harvesting in the Crookhaven estuary is tenuous. It is often suspended for months because of the impacts of storms and polluted run-off from existing rural and urban development.

In response the former Southern Rivers Catchment Management Authority together with the Oyster Farmers and Dairy Farmers conducted a collaborative project to fence off and restore salt marsh and wetland vegetation along the Crookhaven and Shoalhaven River shores to reduce impacts from dairy farming on the oyster industry.

We are concerned that after all this good work that the scale of the proposed development in the Crookhaven River/estuary will cancel out this progress and add further pollution risks to the health of the estuary, and to the future well-being of oyster farming and fish nursery values.

Moreover we are sceptical regarding claims that short term storm conditions would have short durations and insignificant impacts.

Whilst the treatment system is stated as being designed to meet criteria for a 1 in 20 year rainfall event, these predictions do not take account of the severity and increased frequency of major storm events, including the recent East Coast lows experienced at Culburra Beach. Two east coast lows with heavy rain occurred in 2015 and another more damaging major event occurred in June 2016. Culburra Beach had at least 200 mm of rain over the 4th-6th June 2016 event. Also March 2017.

Nor do the assessments take account of predictions of Climate Change Scientists that such storms are likely to increase in intensity in the future.

We do not agree that major storm events occurring during construction would have limited impacts. Whilst construction is intended to be in stages, vegetation would be removed from large surface areas, resulting in surface soil wash aways and subsoil erosion, with potential mud deposition in the Crookhaven wetlands.

Expert advice is consistent in confirming that water pollution control measures are not capable of reducing nutrients in storm water from developed areas to natural levels. In its evidence to the South Coast Sensitive Urban Lands Review, 2006, which reviewed the urban-zoned lands in both the Lake and Crookhaven catchments the then NSW Department of Natural Resources submission addressed the discrepancy between claims of "no increase/improvements in water quality from urban development" based on computer modelling and actual outcomes in the field.

The submission stated that:

"Studies have been undertaken as part of the Comprehensive Coastal Assessment (CCA) have demonstrated that clearing forested catchments for urban landuse will cause a significant increase in nutrient export rates. (Bagiskas et al 2004). This finding means that it is very unlikely that residential development and maintaining water quality in adjacent water ways is feasible, even within the application of best practice water sensitive urban design principles to the development." Page 5. July 2006.

It is our understanding that this finding continues to hold true.

Failure to assess impacts of chemical and heavy metal pollution.

Neither the Martens or Eco Logical Assessments address the impacts of chemical and other pollutants likely to add to pollution caused by existing urban and rural development in the Crookhaven catchment.

Chemical pollutants from both residential and industrial development would enter the food chain and impact on marine life including oysters, fish species and bird life.

Water Quality Impacts on Lake Wollumboola.

We do not consider that any development proposed in the Lake catchment should be considered or approved as part of this application.

As previously mentioned, although we raised these concerns previously, the documents put on public exhibition on 20th August 2017 do not provide assessment of impacts on pollution on the

surface and ground water of Lake Wollumboola due to the areas proposed for development in the lake catchment.

The water pollution controls for the proposed sports oval which includes a constructed wetland to reduce nutrients, intended also to recycle water to irrigate the oval is the exception.

Due to the low nutrient soils of the lake catchment, establishment and maintenance of a grassed oval in this location would require substantial ongoing use of fertilisers and chemicals. Such ongoing use has the potential to contaminate both surface run-off and ground water.

We understand that there is an upland swamp in the headwaters of Downs Creek in this area. Therefore we consider that the proposed location of the Oval is likely to contribute to pollution of Downs Creek and ultimately Lake Wollumboola. The Eco Logical map identifying vegetation communities identifies part of this site as "Potential EEC."

Likewise we are concerned about water quality impacts on Lake Wollumboola from the industrial site, from the roundabout and proposed medium density development south of Culburra Rd. The potential for chemical pollution from the roundabout and industrial area is also high.

The proposed site of the proposed medium density housing straddles the catchment boundary between the lake and Crookhaven catchments.

The proposal for this area involves redirecting drainage by gravity feed from the lake catchment to the Crookhaven catchment as a means of reducing water quality impacts to the lake and the SEPP 14 Wetland around the north west shore.

However there is no certainty that this methodology would be effective. No evidence is provided in the available documents, contrary to the precautionary principle.

Moreover this approach involving adding more nutrient enriched run-off to the Crookhaven catchment. Is this area included in the modelling?

Whilst the JT Response made mention of the Halloran Planning Proposal, no reference was made to the DGRs for that Proposal concerning surface and ground water studies and constraints on development in the Lake Wollumboola catchment.

Decisions regarding any development expansion in the lake catchment at the sites currently proposed, should await the outcomes of the surface and ground water studies under way as part of the Halloran Planning Proposal, and its DGRs.

Such decisions should also take account of the joint Agency Study "*Environmental Sensitivity of Lake Wollumboola: input into considerations of development applications at Long Bow Point, Culburra*," Scanes P et al 2013. NSW Office of Environment and Heritage Report provided in November 2013 at the request of the Department of Planning and Infrastructure.

The Report states in its Executive Summary that;

"Lake Wollumboola is a unique system of high ecological value, characterised by high primary productivity and overall biological diversity, particularly for birds."

"Ground water is most probably a major component of freshwater inputs into the lake. Pollution of ground water represents a major risk to the lake."

"Given the strong control that charophytes exert on lake ecology and water quality, **we consider that the lake is vulnerable to a catastrophic state change** if key processes are disrupted by nutrient enrichment and there is significant loss of charophytes and macrophytes."

"The Lake would never recover from the loss of charophytes and macrophytes and the ecosystem services they provide....resulting in loss of swans and other fauna."

"The demonstrated ecological significance of the lake, the relative rarity of its biotype and its sensitivity to catastrophic state change justify the current limitations to development in the catchment." (ie the Environment protection/conservation zonings adopted in the South Coast Regional Strategy.)

With regard to modelling/assessment of any further development applications in the Lake catchment the Report goes on to say:

"It is essential that any future assessment of potential impacts is based on a sound conceptual and empirical understanding of the Lake ecology and processes. Because of the uniqueness of many of the processes within Lake Wollumboola, it is clear that interpretation of monitoring data cannot be reliably based on conceptual models developed for much better studied systems (eg coastal lakes or riverine estuaries). The conceptualisation of ecological processes for back-dune lagoons that has begun here needs to be further refined and tested."

In our view none of the West Culburra development application assessments meet this Report's criteria for assessment of development impacts on the water quality and ecology of Lake Wollumboola.

Heritage and Archaeology. Part 8 DGRs

Aboriginal Cultural Heritage P 31 of Response.

See concerns above regarding the likely damaging impacts of the Tourist Hub at Cactus Point on Aboriginal Cultural Heritage.

The JT Response advises that there are 20 shell midden sites in the foreshore area including in the Crown Reserve and acknowledges that they would be at risk of damage with a large resident population and tourist development in the immediate vicinity. The JT Response claims that the middens can be conserved by design, presumably of the proposed foreshore park and walking track.

As proposed in our initial submission we do not consider the foreshore walking track should be developed in the SEPP 14 and 71 and 7a zone/Crown land areas because of the likely damaging impacts on both Aboriginal cultural heritage and the wetland environment.

In addition, the JT Response fails to consider the likely spiritual and cultural significance to the Jerrinja community of the river bank sites as the Crookhaven shoreline affords extensive views to Cullunghutti (Mt Coolangatta) the mountain of great spiritual and cultural significance to both local and regional Aboriginal communities.

Flora and Fauna. Part 9 DGRs

Maintaining native vegetation including N-S Wildlife corridor.

We object in principle to the loss of 75 hectares of native vegetation that is recognised as being in good condition and possessing conservation values, including habitat for Threatened Species.

The site is included in Map 14 "Compilation of Areas of High Conservation Value" and Map 15 "Important Wildlife Corridors" in the 2010 NSW Regional Conservation Plan. Dept of Environment Climate Change and Water. This document sets out priority actions for different environmental assets including wildlife corridors, including protection of areas to improve connectivity and to enable the movement and dispersal of flora and fauna. It is relevant given the date that the West Culburra application was lodged. ie 2010.

The DGRs at 9.4 provide for a north-south wildlife corridor through the development as part of the plan. We support maintaining such a corridor if the site is approved for development.

We understand that the Office of Environment and Heritage has accepted that clearing of the site would not have significant impacts on Threatened Species. However these assessments for State Significant applications provide for assessments based on regional not local impacts, provisions which in our view are detrimental to maintaining local biodiversity.

Therefore we consider as unacceptable, local loss of vegetation that is almost 100 years old according to the JT Response and which supports Threatened species such as the Glossy Black Cockatoo, Powerful Owl and white-footed Dunnart. Such approaches represent in our view, "death by a thousand cuts".

The JT Response includes advice from consultants Cumberland Ecology that "there seems to be no ecological benefit of creating a north-south fauna corridor, since such a corridor would connect two entirely different habitats. We believe there is little Ecological benefit to be gained from provision of such a link." Page 20 JT Response.

We disagree with this advice. It seems that the site was considered in isolation of its surrounds and that the assessment did not consider wide-ranging movement of fauna species. These species include water birds and numerous other species that migrate south during spring/summer along the Australian east coast.

In addition international migratory birds fly from Siberia and Alaska to spend the summer and for some young birds, winter at the Shoalhaven-Crookhaven Estuary as well as at Lake Wollumboola. Both estuaries are internationally recognised as part of the East Asian-Australasian Flyway and as the most significant South Coast habitat for migratory birds. Thus assessment under the Environment Protection and Biodiversity Conservation Act should be considered.

The Cumberland Ecology Assessment does not appear either to address assessment of wide-ranging fauna such as Flying Foxes, Microchiropteran Bats and Gliders or consider that many birds and other mobile species play important roles in dispersing seed and fertilising native vegetation. In addition Cumberland Assessment takes no account of the contribution to ecosystems of birds and insects in dispersing pollen. The further the distance between habitats the less likely species and ecosystem diversity will be maintained. Hence the connectivity value of wildlife corridors.

Furthermore as climate change is already affecting distribution of native species it is even more important to maintain wildlife corridors especially north to south.

A north-south wildlife corridor through the site would facilitate movement of species that range both locally and more widely.

It would also benefit the visual appearance of the development and liveability providing natural green space for passive recreation, benefits that are missing from the current proposal.

Proposed Vista corridors.

As previously advised we do not support the proposed Vistas designed to provide views by clearing native woodland vegetation as well as Endangered Ecological Community, Coastal Salt Marsh and Mangroves protected under the NSW Fisheries Act.

Rather than respond positively to concerns regarding the Vista parks the proponent has appointed Cumberland Ecology to defend them, as it seems that the Vistas are proposed for real estate marketing purposes not for ecological benefits.

The consultant recommends that:

"the mangrove vegetation within the viewing corridors be carefully reduced and that the lower lying areas be managed to promote the growth of shrubs and ground cover plants that are part of the Coastal Saltmarsh ECC." Page 20 JT Response.

The Consultant's comments regarding mangroves and coastal saltmarsh appear to convey a fundamental misunderstanding regarding the ecological requirements of habitats for both ecosystems in relation to tidal range, inundation and water quality. It seems that the management intention is to remove the mangroves so that coastal salt marsh would extend into the cleared areas, which according to the assessment "increases the value of the habitat."

However if the area currently supports mangroves, it is likely that regular tidal inundation would facilitate mangrove growth causing it to take over from coastal salt marsh, as already occurs in the Shoalhaven Estuary. Moreover coastal salt marsh requires different aquatic habitat including ground water sources.

The proposed approach does not take account of the implications of sea level rise in the longterm which would result in mangroves moving landwards and out-competing coastal salt marsh.

In addition the proposals to "prune" woodland vegetation and promote growth of shrubs and ground cover also misunderstand the concept of 'ecological communities.' Destruction of the overstorey to provide for view corridors is likely to result in weeds taking over the woodland.

Shoalhaven City Council does not have resources to manage the impacts of development on existing native vegetation, let alone creating further management demands for the future due to the vista corridors.

Assessment of Aquatic Ecology.

Eco Logical Australia undertook an Aquatic Ecology Impact Assessment of the proposal, as none was provided in 2013. This assessment found that:

- there is not likely to be a significant impact on threatened species, populations, communities or their habitats nor is a referral to the Commonwealth necessary
- in accordance with the water quality and estuary model results produced by Martens and Assoc the development would maintain natural processes supporting marine vegetation in natural condition.
- the healthy condition of the marine vegetation indicates it is tolerant of existing pressures and that modelling of impacts for the development indicate insignificant change.
- "Our review of the ecology of the estuary and the model outputs concludes that the proposed subdivision would not alter the health, extent or values of the estuarine aquatic ecology."

We have several concerns with this Assessment.

The assessment did not consider bird species including migratory species listed under the Commonwealth Environment Protection and Biodiversity Conservation Act whilst finding that there is unlikely to be a significant impact on Threatened Species etc.

The Shoalhaven-Crookhaven estuary is a major location for migratory shorebirds and Australian water birds. It is likely that the mangroves and salt marsh areas support both migratory waders and water birds particularly Black Swan, as they occur in more accessible parts of the estuary.

However due to the isolated location of the proposed site, data to inform the value of the mangrove and salt marsh areas of this part of the estuary to migratory birds are not available. Nevertheless the Eco Logical Assessment should have considered potential impacts for these species.

Our 2013 submission also included a CD of photographs that showed Teal nesting in the mangroves and evidence of other wildlife.

Impacts of increased human presence on wildlife should have been assessed.

Moreover, doubts regarding the validity of the claims of a NorBE impact on the Crookhaven wetlands and estuary, are reasonable, as the Eco Logical assessment that the proposed subdivision would maintain natural aquatic processes, is based on the disputed Martens and Assoc modelling.

Also we do not consider that cumulative impacts can be lightly dismissed because of the NorBE claim. It is recognised that the area of the development is relatively small compared to the size of the overall catchment. However it is not known how much additional pollution the wetlands and estuary can absorb, recognising that many of developed, polluted NSW estuaries are beyond recovery, with loss of fish and oyster growing habitat.

Biodiversity Offset 9.1 of DGRs

The exhibition of the TR Response to Public Comment July 2017 provides the first opportunity for public comment on the Biodiversity Offset Strategy, as none was provided as part of the 2013 exhibition.

Two parts of the DGRs provide the framework for the biodiversity offset. These include:

- requirements for consistency with the provisions of the South Coast Sensitive Urban Lands Review adopted in the South Coast Regional Strategy.
- Section 9.1 Flora and Fauna which states, "Provide details of any offset strategy or other suitable mitigation measures to ensure that there is no net loss of native vegetation."

The JT Response and the Eco Logical Summary of Biodiversity Offset Strategy for the West Culburra Part 3 A project 18th April 2017 set out proposals for biodiversity offsets for both the West Culburra development proposal and the Halloran Planning Proposal.

Both documents refer to the Office of Environment and Heritage advice in 2013 and 14 that:

- the Office was satisfied that the development is unlikely to have a significant impact on threatened species and their habitats" and that,
- "the development should only proceed if suitable offsets can be located and secured to ensure that overall biodiversity values are maintained."
- "that an offset parcel should be located in the Lake Wollumboola catchment in accordance with the South Coast Regional Strategy."

The OEH/National Parks and Wildlife Service also identified provisional priorities for offset sites in the Lake Wollumboola catchment. **See Map attached.**

The highest priority site identified is Long Bow Point and surrounds reflecting the view of years of expert advice and Government decisions, that the Long Bow Point peninsula is of high conservation value because of its importance in maintaining the water quality and ecology of Lake Wollumboola and its internationally significant birdlife and also because of the significant values of vegetation communities and fauna on the peninsula and surrounds.

However Long Bow Point and surrounds is not included.

The proposed offset sites for clearing of 75 hectares of native vegetation to enable development of the West Culburra sites as well as additional hectares for the Halloran Planning Proposal are proposed as :

- Lake Wollumboola Biobank site (Jervis Bay)
- Tullarwalla Biobank site (Sussex Inlet.)
- One Tree Bay-East (Sussex Inlet)
- One Tree Bay-West (Sussex Inlet)

For the Lake Wollumboola Biobank site the proposal is that the three identified sites be transferred to Jervis Bay National Park but only after a period of 5-7 years.

Concerns with the Biodiversity Offset Proposal

We have several concerns.

1.The proposal does not separate the Biodiversity Offset for the West Culburra SSD from the Halloran Planning Proposal Offset. The West Culburra SSD offsets are the only offsets that can be decided as part of this assessment process.

2. We object in principle to the loss of 75 hectares of native vegetation that is recognised as being in good condition and possessing conservation values, including habitat for Threatened Species.

The proposed West Culburra site and all the lake catchment private land is included in Map 14 "Compilation of Areas of High Conservation Value" and Map 15 "Important Wildlife Corridors" in the "NSW Regional Conservation Plan. Dept of Environment Climate Change and Water." 2010. Accordingly this document should be taken into account in assessing the West Culburra application.

3. We note that Long Bow Point and surrounds have been omitted and understand that the future of this site is subject to decisions regarding the Long Bow Point Golf course DA as well as the Halloran Planning Proposal.

Nevertheless we consider that in principle Long Bow Point should be the first priority as part of future Biodiversity Offset arrangements, particularly when only part of the offset proposals are for local sites in the Lake Wollumboola catchment.

4. We note that the Eco Logical Assessment of sites is based on the Halloran Trust Planning Proposal, not the Halloran Planning Proposal approved in the Department of Planning and Environment's Gateway decision, of November 2015.

The Department's Halloran Planning Proposal decision identifies Long Bow Point and surrounds for environment protection zoning. However, Figure 1 "Halloran Planning Proposal" of the Eco Logical Australia Biodiversity Offset Proposal shows this site as "low environmental impact" as well as showing the a large area of the Lake Wollumboola catchment north of Culburra Rd as "urban development (primarily residential.) Figure 1 is not consistent with the Halloran Planning Proposal Determination November 2015.

Accordingly in our view, the Biodiversity Offset proposal is contrary to the South Coast Sensitive Urban Lands Review South Coast Regional Strategy and should not be agreed.

Socio-economic impacts.

In our 2013 and 14 submissions we raised concerns about the superficial analysis of socio-economic impacts of the proposed development.

We note that the proposal continues to promote expansion of suburban style development, which in our view attempts to change the natural character of Culburra Beach to its detriment.

Whilst the proposal promotes tourist development we consider the proposals for Cactus Point are overblown, unrealistic and again ecologically unsustainable.

The proposal does not address the most 2016 Census outcomes or substantial analysis of population trends provided by Shoalhaven City Council.

Based on experience in other parts of the Shoalhaven coastal communities, it is clear that urban expansion, is not the panacea to recognised social and economic issues in our region.

We continue to believe that the future of Culburra Beach is best served by maintaining its natural environment, designing limited development expansion that is ecologically sustainable together with niche tourism that supports the environment, Aboriginal cultural heritage and our beach, surfing and village lifestyle.

Lake Wollumboola Protection Association Inc August 2017.

NPWS Estate

Offset parcels priority 2

Offset parcels priority 1

