From: Carolyn Milnes <CMilnes@devonport.tas.gov.au>
Sent: Tuesday, 30 January 2024 9:33 AM
To: TPC Enquiry; Townsend, Janelle
Subject: Devonport - draft amendment AM2022.01 and permit PA2022.0024 - CAS Comments - stormwater management - 133 Middle Road, Miandetta

Hi Janelle,

Please see below the response from NRE.

They have advised that they don't have the expertise to deal with stormwater management but have offered some other advice.

Given the above, I wonder if it might be best to remove the requirement for advice from a relevant State authority or agency. Perhaps only advice from a suitably qualified person is what's achievable.

I also provided my thoughts on the intention behind the standards to NRE and wondered if that may also be helpful to you.

The intention is that the stormwater infrastructure for the subdivision is designed in such a way that the water can be directed to the habitat areas appropriately. It is likely that water sensitive urban design (WSUD) principles would need to be used to ensure the water is clean enough to enter the habitat and that it flows to the habitat at an appropriate rate, ie not so quickly as to cause erosion. The standard states that 'Stormwater management must not adversely impact the central north burrowing crayfish (*E. granulatus*) or E. ovata habitat…' and it is envisaged that a suitably qualified person design a system that ensures compliance.

Once subdivision is approved the intention is that any subsequent development ensures at least 40% of the site is free from impervious surfaces to ensure water is still able to enter the ground water and filter through to the habitat. This is in addition to the water collected through the reticulated system. If the 40% is not achievable a suitably qualified person must design a system that ensures the stormwater management does not impact the habitat. Once again, this is likely to involve WSUD principles.

Cheers,

Carolyn

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From: Cymbaline, Cym <Cym.Cymbaline@nre.tas.gov.au>
Sent: Tuesday, January 30, 2024 8:28 AM
To: Carolyn Milnes <CMilnes@devonport.tas.gov.au>
Cc: Kuechler, Antje <Antje.Kuechler@nre.tas.gov.au>
Subject: CAS Comments - stormwater management - 133 Middle Road, Miandetta

Hello Carolyn

Thank you for your email and the opportunity to comment on the proposed Applicable Standards relating to stormwater management for 133 Middle Road, Miandetta. Please note that Conservation Assessments (CAS) does not have expertise in stormwater management. As such, we are unable to provide specific advice can be offered regarding the appropriateness of the proposed 40% pervious surface area for residential lots to allow persistence of threatened natural values within the proposed Environmental Management Zone:

- central north burrowing crayfish (*Engaeus granulatus*) – listed as endangered under both the Tasmanian *Threatened Species Protection Act 1995* (TSP Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act); and
- *Eucalyptus ovata* forest and woodland (TASVEG code DOV) – listed as threatened under the Tasmanian *Nature Conservation Act 2002* (NC Act) and representing potential foraging habitat for swift parrot (*Lathamus discolor*).

However, CAS anticipates that without mitigation, DOV and burrowing crayfish habitat will likely be negatively affected by development of the property, via altered hydrology. CAS anticipates that the integration of civil engineering and vegetation ecology expertise may be required to achieve the proposed Stormwater and Stormwater Reticulation Objectives. CAS suggests that an environmental consultant may be able to assist.

While we do not have the expertise to offer specific advice regarding stormwater management, we would like to bring your attention to the following considerations related to natural values for this project.

In addition to hydrological changes, any proposed development may also impact DOV and burrowing crayfish through nutrient enrichment and pollution from runoff. DOV may also be negatively impacted by the effects of fragmentation and isolation, and the increased likelihood of weed invasion. In addition to retaining a minimum 40% permeable surface area within lots in the General Residential Area/Precinct A, further management actions may be needed to ensure persistence of DOV and burrowing crayfish on site.

***Eucalyptus ovata* Forest and Woodland (DOV)**
Altered hydrology is a recognised threat to the persistence of DOV, affecting the viability and condition of the vegetation community. While the DOV condition is not described in the *Natural Values Report* (Scott Livingston, 2021), CAS assumes that the current hydrological regime is appropriate to allow its persistence. As such, it is recommended that hydrological changes to the Environmental Management Zone are avoided.

If the stormwater management design delivered a water flow regime that mimicked the quality/quantity of the pre-development regime, this would likely support the persistence of the DOV patch. Research conducted in southeast Australia indicates that it is possible to design stormwater

management systems to deliver hydrological regimes that mimic pre-development regimes (Walsh *et al.* 2016, Principles for urban stormwater management to protect stream ecosystems). Such systems result in significant improvements in riparian health (Walsh *et al.* 2022, Dispersed Urban-Stormwater Control Improved Stream Water Quality in a Catchment-Scale Experiment). Conversely, substantial declines in riparian ecology have been shown to result from effective imperviousness of as little as 5-10% across catchments (Walsh *et al.*, Technical Report: Urban stormwater and the ecology of streams).

In addition to maintaining the existing hydrological regime, CAS recommends the following:

(1) Retain a *minimum* 30 m buffer of non-threatened native vegetation around DOV in line with recommendations outlined in the Department of Climate Change, Energy, the Environment and Water's Conservation advice Tas ovata brookeriana forests and woodlands (environment.gov.au). Noting that the opportunity to buffer DOV along its northern boundary has been lost, retaining native vegetation along the remaining boundaries to the east, west and south is considered even more important, and thus, should be extended further than 30 m if possible.

(2) The patch of DOV is located on an unmapped drainage line. Actions that maintain or improve the ecological condition of the drainage line upstream of the patch of DOV are likely to support its persistence. Retaining native vegetation alongside the drainage line upstream of the patch of DOV would support the ecological condition of the waterway and is in line with recommendations contained within the NRE Waterways and Wetlands Works Manual (Guidelines #4, section 2.3), which states that 'Areas of bushland should be retained, particularly along drains, to slow runoff and filter stormwater pollutants.' To meet the objective of maintaining riparian vegetation, retaining vegetation within 30 m of a waterway is deemed an Acceptable Solution within the NRE Waterways and Wetlands Works Manual (Guidelines #7, p. 4). As such, CAS recommends retaining a 30 m vegetation buffer along the drainage line (1) upstream of the patch of DOV and (2) covering the extent of burrowing crayfish habitat.

(3) Include the above-mentioned buffer areas within the Environmental Management Zone.

(4) Undertake a baseline vegetation condition assessment of the DOV patch prior to impact to enable future monitoring (this data should be submitted to the Natural Values Atlas) of the effectiveness of the management actions.

Additional Comments

- Part of the property is currently mapped in TASVEG 4.0 as *Eucalyptus obliqua* wet forest (undifferentiated) (TASVEG code WOU). The *Natural Values Report* confirms the presence of WOU. Please note that the use of WOU is discouraged and should only be used where field access is not possible to determine a more specific vegetation community. "*Where [field access is] possible, all areas mapped as WOU should be re-coded to one of the following: Eucalyptus obliqua forest over rainforest (WOR), Eucalyptus obliqua forest over broad-leaf shrubs (WOB) or Eucalyptus obliqua forest over Leptospermum (WOL)"* (From Forest to Fjaeldmark (2nd ed.) - Wet *Eucalyptus* forest and woodland, pg. 31). CAS is unable to reassign areas mapped as WOU to specific vegetation communities based on the Site Flora species list provided in the *Natural Values Report* (p. 19). As such, NRE Tas' Tasmanian Vegetation Monitoring and Mapping Program is unable to integrate the survey findings into TASVEG to support the ongoing improvements to the accuracy of the dataset.

- It is unclear if the southeast corner of the property, south of the transmission line, was surveyed (as it falls outside the area proposed for development). The *Natural Values Report* confirms the TASVEG 4.0 mapping of WOU (see notes regarding WOU above). However, TASVEG Live re-maps this area as DOV (the updated mapping is the result of a field survey at 57A Berrigan Road, Miandetta, conducted in November 2021). This area may also coincide with burrowing crayfish habitat (noting the presence of a drainage line). Additionally, recent aerial imagery indicates the presence of *Melaleuca ericifolia* swamp forest (TASVEG code NME), which is also listed as threatened under the NC Act. It is unclear if the proposed subdivision has potential to impact this area and whether this area was surveyed. It is recommended this is clarified. If threatened natural values are identified in this area and are likely to be impacted by the proposed development, then it is recommended that mitigation measures are applied. Consideration could be given to applying the Environmental Management Zone over this area, and connecting it with the currently proposed Environmental Management Zone along the eastern boundary.

- *The Natural Values Report* states (pg. 5) that "no threatened flora were observed". However, the *Natural Values Report* includes golden dodder (*Cuscuta tasmanica*), which is listed as rare under the TSP Act, on the Site Flora list (pg. 19). It should be noted that the Site Flora list does not identify golden dodder as TSP Act-listed species. CAS recommends clarification is provided whether this species was observed during the survey. If confirmed, CAS recommends a targeted survey for this species, noting that surveys are generally regarded as current for two years.

If you have any queries about the above comments, please contact Antje Kuechler (antje.kuechler@nre.tas.gov.au).

Kind regards,

Cymbaline

Tasmanian Government

Cymbaline | **Section Head**
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In recognition of the deep history and culture of this island, I acknowledge and pay my respects to all Tasmanian Aboriginal people; the past and present custodians of the land.

From: Carolyn Milnes <CMilnes@devonport.tas.gov.au>
Sent: Tuesday, December 19, 2023 11:31 AM
To: Conservation Assessments <ConservationAssessments@nre.tas.gov.au>
Subject: FW: Query regarding stormwater absorption for E. granulatus & E. ovata habitat

Good morning,

Further to my email below I provide some additional information. Please let me know if you require anything else.

Please find attached an application for a Draft Amendment for changes to the zoning configuration at 133 Middle Road, Miandetta. The planning permit component discussed in the application is no longer proposed.

The application includes a Natural Values Report by Scott Livingston (see page 112) which identifies an area of *E. granulatus* habitat along the northern boundary, adjacent to the rear of the Penambul Drive properties. Also identified is an area of *E. ovata* towards the northern boundary.

At the request of the Tasmanian Planning Commission the proposal has since changed to include an area of Environmental Management Zone which will encompass the above habitat (see maps below). Areas of Open Space Zone and General Residential Zones are also proposed.

Adjacent to the Environmental Management Zone will be the General Residential Zone which will likely be subdivided into residential lots although the configuration is currently unknown. There is also potential for large multiple dwelling development or other residential development such as nursing homes. I'm seeking advice regarding the best way to ensure that the stormwater flows from the General Residential land make its way to the Environmental Management Zone.

We have proposed a standard that requires as least 40% of each future residential lot is impervious to allow for stormwater absorption and therefore maintain flows to the Environmental Management Zone (see below). Another suggestion is to allow for one single dwelling without other constraints, however I feel this would allow people to potentially cover a much larger portion of the site with hardstand areas, preventing any significant absorption. I am wondering if you think the standard below is appropriate and/or if an area greater than 40% should remain free from impervious surfaces to allow for greater absorption? If clause A1 could not be met then P1 would need to be satisfied which includes referral to an agency such as NRE.

DEV-S5.7.1 Stormwater

Objective:	That stormwater management does not adversely impact the habitat of the central north burrowing crayfish (*E. granulatus*) or *E. ovata* through the drying out or long-term inundation of the habitat.
Acceptable Solutions	**Performance Criteria**
A1 Within Precinct A each lot must have a site area of which at least 40% of the site area is free from impervious surfaces.	**P1** Stormwater management must not adversely impact the central north burrowing crayfish (*E. granulatus*) or E. ovata habitat, having regard to: (a) any advice from a suitably qualified person regarding the impact any change to overland stormwater flows or condition may have on the habitat; and (b) any advice from a relevant State authority or agency.

Should a residential subdivision be undertaken on the land that falls toward the Environmental Management Zone there would be the requirement that the reticulated stormwater be designed in accordance with the clause P1 below.

DEV-S5.8.1 Stormwater reticulation

Objective:	That stormwater management preserves the habitat of the central north burrowing crayfish (*Engaeus Granulatus*) and the *E. ovata* community.
Acceptable Solutions	**Performance Criteria**
A1 Each lot, or a lot proposed in a plan of subdivision, must (a) not be located in Precinct A; and (b) be capable of connecting to a public stormwater system.	**P1** Stormwater management must not adversely impact the central north burrowing crayfish (*E. granulatus*) or *E. ovata* habitat, having regard to: (a) any advice from a suitably qualified person regarding the impact any change to overland stormwater flows or condition may have on the habitat; and (b) any advice from a relevant State authority or agency.

Mapping below shows the Environmental Management, General Residential and Open Space Zones.

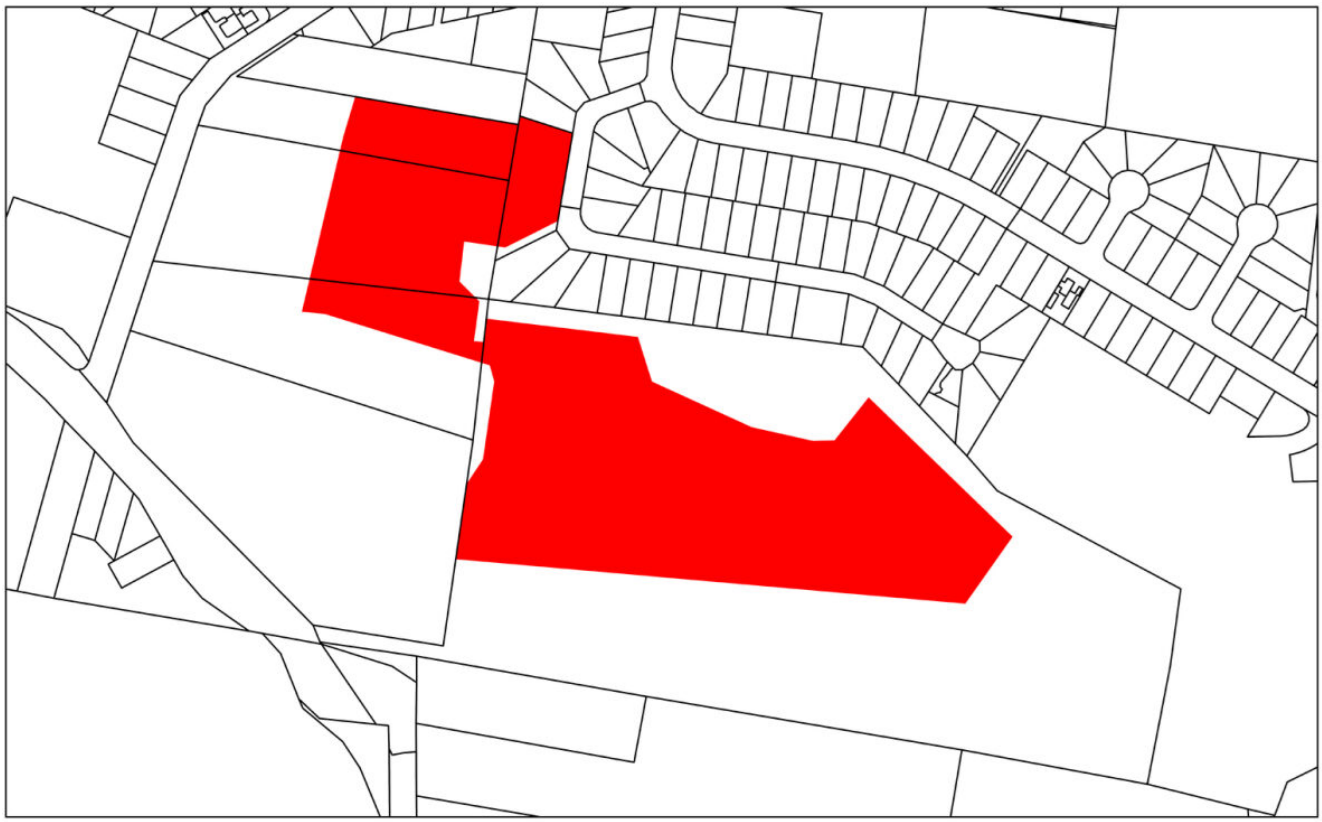
I hope the above information makes sense. Please let me know if you require more information.

Many thanks,

Carolyn

Environmental Management Zone

Open Space Zone



General Residential Zone

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From: Conservation Assessments <ConservationAssessments@nre.tas.gov.au>
Sent: Friday, December 15, 2023 12:40 PM
To: Carolyn Milnes <CMilnes@devonport.tas.gov.au>
Subject: FW: Query regarding stormwater absorption for E. granulatus & E. ovata habitat

Good afternoon, Carolyn,

Thank you for your request for advice regarding the hydrological needs of *E. granulatus* & *E. ovata* habitat.

The role of Conservation Assessments (CAS) is to provide advice to regulators, including councils, on the impacts of development proposals on natural values (including threatened species, geoconservation values, karst, acid sulfate soils, seabirds, and shorebirds) to inform their Environmental Impact Assessment (EIA). To request CAS advice email referrals should be sent to ConservationAssessments@nre.tas.gov.au.

CAS is happy to provide advice on your request however we will require more information to provide a meaningful response. It is unclear from your email what is being proposed and how the proposition will impact local natural values. To progress your request please provide additional information.

Requests for advice take four weeks to complete. However, due to the coming festive break and associated staff leave it is unlikely your request will be completed before late-January. Please let me know as soon as possible if you require a response earlier and I will endeavour to expedite the process, please note I cannot commit to a faster turnaround at this busy time of year, my apologies.

Many thanks,
Dan.

Tasmanian Government

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From: Carolyn Milnes <CMilnes@devonport.tas.gov.au>
Sent: Thursday, December 14, 2023 3:58 PM
To: Cymbaline, Cym <Cym.Cymbaline@nre.tas.gov.au>; Kuechler, Antje <Antje.Kuechler@nre.tas.gov.au>
Cc: Gibbs, Mary <Mary.Gibbs@epa.tas.gov.au>
Subject: Query regarding stormwater absorption for E. granulatus & E. ovata habitat

Good afternoon,

Council is working on some changes to a draft amendment for 133 Middle Road, Miandetta which includes *E. granulatus & E. ovata habitat*.

I am hoping to get some advice on the proposed drafting and wondering if you could let me know who would be the best person to direct my questions to and how long it might take to get some advice as the Planning Commission are keen to get some surety around dates.

We are seeking to maintain as much stormwater absorption as possible into the habitat areas and have the following standards drafted.

Objective:	That stormwater management does not adversely impact the habitat of the central north burrowing crayfish (*E. granulatus*) or *E. ovata* through the drying out or long-term inundation of the habitat.
Acceptable Solutions	**Performance Criteria**
A1 Within Precinct A each lot must have a site area of which at least 40% of the site area is free from impervious surfaces.	**P1** Stormwater management must not adversely impact the central north burrowing crayfish (*E. granulatus*) or E. ovata habitat, having regard to: (a) any advice from a suitably qualified person regarding the impact any change to overland stormwater flows or condition may have on the habitat; and (b) any advice from a relevant State authority or agency.

The intention of the Acceptable Solution is to maintain stormwater absorption and therefore ensure as much water as possible makes its way into the habitat areas (highlighted in yellow below). The standard would apply to the hatched area which falls towards the habitat.

My query is, is 40% of each residential lot sufficient to assist with this, and if not, what do you think would be acceptable? It is intended that the land be subdivided into residential lots of 450m^2 or larger, generally approx. 600m^2.

Please let me know if you have any questions.

Any advice would be greatly appreciated.

Regards,

Carolyn

DEV-S5.3.1 – Devonfield Precinct A

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