



Our ref: DOC20/714725-12

Your ref: MP 10_0137 MOD14

Ms Emma Butcher

Senior Planner
Regional Assessments
Department of Planning, Industry and Environment
Emma.Butcher@planning.nsw.gov.au

Dear Emma

Huntlee New Town Residential Subdivision Stage 1 (MP 10_0137 MOD 14) – Review of Modification

I refer to your email dated 1 September 2020 in which Planning and Assessments Group (P&A) of the Department of Planning, Industry and Environment (the Department) invited Biodiversity and Conservation Division (BCD) of the Department to comment on modification 14 of the Huntlee New Town Residential Subdivision Stage 1 (MP 10_0137 MOD 14), located at Branxton; in the Cessnock local government area.

BCD has reviewed the correspondence from Urban Ethos titled '*Section 4.55(1A) Modification Application – MP-10_0137 (MOD 14) – Huntlee New Town, Branxton*' (dated 26 August 2020), including relevant appendices, annexures and attachments in relation to impacts on biodiversity and flooding.

With respect to Aboriginal cultural heritage, BCD is no longer the relevant agency for Aboriginal cultural heritage matters. From 1 July 2020, the regulation of Aboriginal cultural heritage transferred to Heritage NSW. Any enquiries, assessments, requests for comment or matters relating to Aboriginal cultural heritage should now be sent to heritagemailbox@environment.nsw.gov.au.

BCD's recommendations are provided in **Attachment A** and detailed comments are provided in **Attachment B**. If you require any further information regarding this matter, please contact Steven Cox, Senior Team Leader, on 4927 3140 or via email at rog.hcc@environment.nsw.gov.au

Yours sincerely

JOE THOMPSON
Director Hunter Central Coast Branch
Biodiversity and Conservation Division

Date: 17/09/2020

Enclosures: Attachments A and B

BCD's recommendations

Huntlee New Town Residential Subdivision Stage 1 MOD 14

Biodiversity

1. BCD recommends that the proponent provides a detailed description of all the proposed areas of open space to be removed. This should describe (but not be limited to): (i) the extent of native vegetation present, including derived native grasslands where present, (ii) the appropriate Plant Community Type, including if it represents a threatened ecological community, (iii) the habitat value, (iv) any potential candidate threatened species that it may support, (v) its size and (vi) the condition of the vegetation. All areas are to be shown on a georeferenced aerial image.
2. BCD recommends the proponent provides a justification for the potential removal of conservation measures, such as riparian buffers and any other vegetated areas (included as open space), that were approved for the original Huntlee project.
3. BCD recommends that the area of open space to be removed is assessed against the triggers for entering into the Biodiversity Offset Scheme. If triggered, a Biodiversity Development Assessment Report is to be prepared in accordance with the Biodiversity Assessment Method (2017).
4. BCD recommends that the proponent demonstrates how the proposed removal of 15.03 hectares of riparian corridors (including 'Core Riparian Zones') complies with the Huntlee Development Control Plan 2013 objective to protect, restore and enhance riparian corridors.
5. BCD recommends that approval conditions C9(c) and C10 are retained.

Flooding and flood risk

6. The MOD 14 flooding assessment should be updated to include concurrent flooding in Black Creek, revision of losses, revision of hydraulic roughness, inclusion of structures and blockage assessment. Resultant mapping should be provided showing an overlay of flooding against proposed lot and road locations.
7. The proponent should revise flood modelling using the broader Black Creek flood model to determine if on-site detention can be removed from the proposal without causing additional flood impacts.
8. The proponent should prepare a floodplain risk management plan in consultation with Cessnock City Council and the Department to show how flood warning and emergency evacuation will be achieved for floods in excess of the 1% annual exceedance probability (AEP) event.
9. The subdivision should be designed so that flood-free access is provided to all lots for the 1% AEP event. Rising road access is also required to permit evacuation of the area to a place of safety for all events up to and including the PMF event. A flood warning system may also be required to ensure that evacuation can take place before roads become impassable.

10. Riparian areas provide essential functions for flood and stormwater management for the Huntlee Subdivision and the proponent needs to demonstrate how these functions will be maintained if riparian areas are transferred from public to private ownership.
11. The Huntlee DCP 2013 should be extended to ensure that water sensitive urban design measures are enforced within the new development area. The proponent should also provide detail about how proposed on-site water treatment devices will achieve pollution reduction targets, how they will be maintained and how they will be imposed on privately owned sites.

BCD's detailed comments

Huntlee New Town Residential Subdivision Stage 1 MOD 14

Biodiversity

1. The impacted areas of open space need to be further described

BCD understands that the modification relates to changes to the layout of Residential Substage 5 within Stage 1. Part of the proposed modification proposes the removal of 27.57 hectares of open space, which includes 15.03 hectares of riparian corridor, 11.4 hectares of public open space and 1.14 hectares of local park (as per Table 2 in the Urban Ethos letter, dated 26 August 2020). However, the figures provided do not show the exact location of the areas of open space proposed to be removed.

The condition and nature of the proposed open space areas to be removed is uncertain with respect to native vegetation cover, biodiversity values and potential threatened species habitat. Based on Figure 1 in the Urban Ethos letter, and comparing it to Figure 2, there appears to be significant reduction in riparian corridors, many of these representing 'Core Riparian Zones' on the Huntlee Development Control Plan 2013. When comparing these figures to current aerial photography (such as Near Map), many of these areas represent what appears to be areas of native vegetation, including what would be considered important areas of connectivity and potential areas of threatened species habitat.

Recommendation 1

BCD recommends that the proponent provides a detailed description of all the proposed areas of open space to be removed. This should describe (but not be limited to): (i) the extent of native vegetation present, including derived native grasslands where present, (ii) the appropriate Plant Community Type, including if it represents a threatened ecological community, (iii) the habitat value, (iv) any potential candidate threatened species that it may support, (v) its size and (vi) the condition of the vegetation. All areas are to be shown on a georeferenced aerial image.

2. The removal of open space may impact on approved conservation measures

The removal of open space, including 15.03 hectares of riparian corridor, may impact on areas included as approved conservation measures for the original Huntlee project. As noted in Recommendation 1 above, further information is required from the proponent to enable BCD to understand the impacts of the proposed open space removal.

The riparian corridor areas proposed to be removed likely include riparian buffers that were to be established as conservation measures for the project. The establishment of riparian buffers as part of the conservation measures for the 2013 project approval contributed to a maintained or improved biodiversity values outcome for the original project. Justification should be provided for why they are now proposed to be impacted.

Recommendation 2

BCD recommends the proponent provides a justification for the potential removal of conservation measures, such as riparian buffers and any other vegetated areas (included as open space), that were approved for the original Huntlee project.

3. Biodiversity offsetting may be required for the removal of areas of open space

If the removal of 27.57 hectares of open space involves the clearing of native vegetation, biodiversity values or habitat for threatened entities (i.e. threatened species and threatened ecological communities) that were to be conserved as part of the original Huntlee project, the proponent should assess those areas under the Biodiversity Offset Scheme.

If the removal of open space triggers the Biodiversity Offset Scheme, a Biodiversity Development Assessment Report (BDAR) should be prepared in accordance with the Biodiversity Assessment Method. The BDAR must include a Biodiversity Offset Strategy which articulates how the biodiversity credits will be retired.

Recommendation 3

BCD recommends that the area of open space to be removed is assessed against the triggers for entering into the Biodiversity Offset Scheme. If triggered, a Biodiversity Development Assessment Report is to be prepared in accordance with the Biodiversity Assessment Method (2017).

4. The DCP requires riparian corridors to be protected

The original Huntlee Ecological Assessment Report (EAR, September 2010) refers to the conservation significance of the retained riparian corridors throughout the report. Furthermore, riparian buffers are listed as a conservation measure on page 55 of the EAR, and are considered an important feature in retaining connectivity, particularly along those features identified as 'Core Riparian Areas'. Their removal will significantly alter the conservation character of the site and remove significant native vegetation and habitat retained under the 2013 approval.

The retention of the riparian corridors is acknowledged in the original Huntlee impact assessments as providing conservation outcomes for specific threatened species and Endangered Ecological Communities (EEC). These include *Eucalyptus glaucina*, Central Hunter Grey Box—Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions EEC, Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions EEC, Hunter Lowland Redgum Forest in the Sydney Basin and New South Wales North Coast Bioregions EEC, and Central Hunter Ironbark—Spotted Gum—Grey Box Forest in the New South Wales North Coast and Sydney Basin Bioregions EEC.

The Huntlee Development Control Plan 2013 (DCP) also provides guidance on riparian corridor retention. Page 25 of the DCP sets the objective '*to protect, restore and enhance the environmental values and functions of water courses and riparian corridors as shown in Figure 6*'. The DCP objective is to be met by:

- riparian corridors are to be provided in accordance with Figure 6 (in the DCP) and
- the vegetated riparian zone (VRZ) setbacks should comply with the 'Guidelines for Riparian Corridors on Waterfront land' (DPI-Office of Water, 2012).

The removal of riparian corridors within Substage 5 will lead to additional loss of corridor function and impacts to threatened species habitat and EECs. Additionally, Figure 13 of the DCP also shows 'Core Riparian Zones' (CRZ) that should be retained. CRZs represent the important riparian zones to be retained to maintain ecological function.

Recommendation 4

BCD recommends that the proponent demonstrates how the proposed removal of 15.03 hectares of riparian corridors (including 'Core Riparian Zones') complies with the Huntlee Development Control Plan 2013 objective to protect, restore and enhance riparian corridors.

5. Conditions C9(c) and C10 should be retained

Conditions C9(c) and C10 should be retained as the conditions specifically require the protection of the buffered areas even if the plants die. Condition C10(b) requires appropriate measures to be implemented to protect the *Persoonia pauciflora* plants on the lot, including the required 30 metre buffer and habitat protection to ensure that the 30 metre buffer areas around the *Persoonia pauciflora* plants remain as *Persoonia pauciflora* habitat even after the mature plant dies, to allow for potential future new plants to grow there (in consultation with the Department and to the satisfaction of the Certifying Authority).

The intent of Condition C10 is to maintain extant *Persoonia pauciflora* plants, future recruitment and their habitat. Whilst the three mature extant plants have senesced, the potential for future new plants to grow remains and the area still remains habitat. In addition, in the last 10 years, adverse climatic conditions (i.e. prolonged drought) have occurred over the site which is not conducive to recruitment. BCD does not support the removal of either Condition C9(c) or C10.

Furthermore, the removal of these Conditions C9(c) and C10 would be inconsistent with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Huntlee approval. The Commonwealth approval requires three conservation areas for *Persoonia pauciflora* to be set up and be protected by a legal instrument to ensure in perpetuity conservation and to buffer all plants in the conservation areas by 75 metres. The *Persoonia pauciflora* plants referred to in the NSW consent (Consent Conditions C9(c) and C10) occur in the conservation areas covered by the Commonwealth approval.

Recommendation 5

BCD recommends that approval conditions C9(c) and C10 are retained.

Flooding and flood risk

6. The local flood assessment provided in support of the proposal is not sufficiently robust to assess flood risk or inform flood planning levels on subject sites

The Stormwater Management Strategy Large Lot Residential Subdivision Revision B dated 15 June 2020 (the MOD 14 flooding assessment) prepared by Northrop Engineers, has been provided in support of the proposed modification. This strategy states that it supersedes previous studies undertaken by Worley Parsons in 2012.

The flooding assessment is not considered to adequately depict flood risk within the development area as it makes a number of assumptions that are not supported with evidence, specifically:

- Local flooding has been assessed with a tailwater level equal to the bankfull level at Black Creek. This does not consider concurrent flooding in Black Creek.
- Flood modelling does not include any structures such as road crossings and bridges. Inclusion of these together with appropriate blockage assessment is essential to determine design flood levels on roadways and the impact of structures on flood levels upstream of crossings.

- Flood modelling results are not shown on the road and lot layout, which makes accurate assessment of impacts difficult.
- Flood modelling adopted 37 millimetre (mm) initial loss and 2mm continuing loss. Calibration and/or validation data have not been provided. These loss values are greater than those previously used for the Huntlee Subdivision in calibrated models prepared by WMA Water and Worley Parsons. These values may be based on Australian Rainfall and Runoff (ARR2019) methods; however these values should be confirmed by calibration. Revised losses consistent with the WMA Water Black Creek flood study should be used in the flood model.
- Roughness values used in the hydraulic model are much lower than those used in the WMA Water model, with hydraulic roughness values in riparian zones of 0.03 to 0.04 being used in the Northrop assessment. A value of 0.08 was used in the WMA Water assessment. Use of low hydraulic roughness results in faster flow of flood waters and reduces design flood extents and levels. Low roughness values cannot be used without further justification.

Recommendation 6

The MOD 14 flooding assessment should be updated to include concurrent flooding in Black Creek, revision of losses, revision of hydraulic roughness, inclusion of structures and blockage assessment. Resultant mapping should be provided showing an overlay of flooding against proposed lot and road locations.

7. The proposed amendment will remove on-site stormwater detention without sufficient justification

The MOD 14 flooding assessment provides an analysis of relative timing of flood flows from the developed area against the extended catchment as justification to remove on-site stormwater detention that was previously required. This approach uses local area modelling that assumes there is no concurrent flooding in Black Creek. Concurrent flooding occurred during storm events in 2007 and 2015 and therefore the broader Black Creek flood model should be used to determine if on-site detention can be removed without increasing flood risks or flood impacts.

Recommendation 7

The proponent should revise flood modelling using the broader Black Creek flood model to determine if on-site detention can be removed from the proposal without causing additional flood impacts.

8. The flood prone nature of the site poses significant residual risk to residents in the event of a flood greater than the 1% annual exceedance probability event

The MOD 14 flood assessment maps the 1% annual recurrence interval (ARI) and probable maximum flood (PMF) extents for local flooding. However the PMF extent for Black Creek is not shown. A previous flood assessment prepared by Worley Parsons shows that the majority of Substage 5 of the Huntlee Subdivision is within the PMF extent of the Black Creek floodplain. Another study prepared by WMA Water indicates that flood depths in excess of 2 metres (m) occur across the development area in a PMF flood.

Full evacuation and extensive damage to private property would occur during a PMF flood. Evacuation of many of the planned residential sites would also be required for more frequent events such as the 200-year and 500-year flood events. It is necessary for the proponent to develop a floodplain risk management plan to indicate how flood warning and evacuation would be managed for the proposed development. This should note that previous flood

mapping indicates that Wine Country Drive would be cut in both directions from the access point in large flood events.

The proponent should not rely on local or state agencies to manage flood risks. Cessnock City Council does not have a floodplain risk management plan for the site.

Recommendation 8

The proponent should prepare a floodplain risk management plan in consultation with Cessnock City Council and the Department to show how flood warning and emergency evacuation will be achieved for floods in excess of the 1% annual exceedance probability (AEP) event.

9. Flood free access is not provided

Stormwater plan CSK01.01A of the MOD 14 flooding assessment shows that Lots 1 to 11 do not have flood free access in a 1% AEP flood. Lots 57 and 56 are also not labelled as flood affected on this map, which contradicts Figure 2A in the plan. Cessnock City Council's Development Control Plan (DCP) requires flood-free access to each allotment in a subdivision. Section L6.8 of the NSW Floodplain Development Manual requires a consent authority to consider effective flood access for events greater than the 1% AEP event.

Recommendation 9

The subdivision should be designed so that flood-free access is provided to all lots for the 1% AEP event. Rising road access is also required to permit evacuation of the area to a place of safety for all events up to and including the PMF event. A flood warning system may also be required to ensure that evacuation can take place before roads become impassable.

10. The planning proposal will require landholders to maintain riparian areas

The approved lot layout for the Huntlee Subdivision contains three distinct riparian zones and local flooding is generally confined to these areas. MOD 14 proposes to remove these riparian zones, which cover 15.03 ha of public space and return them to private ownership. No consideration has been given to requirements for landholders to maintain these areas so that that flood behaviour is not affected.

Recommendation 10

Riparian areas provide essential functions for flood and stormwater management for the Huntlee Subdivision and the proponent needs to demonstrate how these functions will be maintained if riparian areas are transferred from public to private ownership.

11. The stormwater report provides minimal information on how water quality and quantity is to be managed

The flooding assessment report indicates that stormwater quality will be managed on each individual site within the development. It is not clear how this will be achieved. The Huntlee DCP 2013 provides water quality objectives and guidance for how they are to be achieved but does not cover the MOD 14 area. No details have been provided about on-site water quality management measures. There is no assessment of discharge points to riparian corridors or proposed streambank erosion control measures which may be required. Three bioretention basins are specified, but no details are given of roadside swales or contour banks on development sites.

Recommendation 11

The Huntlee DCP 2013 should be extended to ensure that water sensitive urban design measures are enforced within the new development area. The proponent should also provide detail about how proposed on-site water treatment devices will achieve pollution reduction targets, how they will be maintained and how they will be imposed on privately owned sites.