

2 April 2015

Mr Jayant Pattekar
Project Manager, Bullaburra Great Western Highway Upgrade
Roads and Maritime Services
Locked Bag 928
North Sydney NSW 2059

By post and email: jayant.pattekar@rms.nsw.gov.au

CC: joseph.fanous@rms.nsw.gov.au

CC: peter.morrall@epa.nsw.gov.au

CC: president@bluemountains.org.au

Dear Mr Pattekar

Great Western Highway upgrade, Bullaburra East – damage to hanging swamps

1. We act for Blue Mountains Conservation Society (**BMCS**) Inc. We refer to the project above.
2. We are instructed that:
 - a. our client has evidence of channelisation, damage and pollution of hanging swamps at Bullaburra adjacent to the project (**Bullaburra Swamps**), identified in the 2010 Review of Environmental Factors (p 25) (see **Attachments A – C**);
 - b. this is adversely affecting the swamps' water quality and impacting on the organisms, including threatened species, that may be living there;
 - c. a likely cause of this damage is runoff from the stormwater basin built under the Bullaburra East approval (adjacent to De Quency Road off Genevieve Road, Bullaburra).
3. We understand Roads and Maritime Services (**RMS**) self-approved this highway widening and alteration in November 2009, under Part 5 of the *Environmental Planning and Assessment Act 1979* (**EP&A Act**) and clauses 94(1) and 94(2) of the *State Environmental Planning Policy (Infrastructure) 2007* (**Infrastructure SEPP**). We understand there was also a subsequent approval for stormwater drainage (see 'Part 5 assessment requirements').
4. We are instructed to raise this damage with you as a potential breach of RMS's Part 5 approval(s) under the EP&A Act.
5. Unfortunately, the lack of public access to the approval(s) themselves makes it difficult to verify the applicable project conditions.

Summary and next steps

6. First, we would appreciate if you could please clarify the relevant project approval dates and conditions. As discussed during our phone call on 25 March 2015, on behalf of our client we seek a copy of:
 - a. the Part 5 approval determined by RMS in November 2009;
 - b. any other approvals that relate to the stormwater basin at Bullaburra;
 - c. any further Reviews of Environmental Factors that relate to the basin.
7. Second, on the basis of our instructions and available public information, our client is concerned that RMS may be in breach of its Part 5 approval and EP&A Act obligations if impacts to the Bullaburra swamp endangered ecological communities (**EECs**) have occurred as a result of the Bullaburra East project (see also para 22).
8. Third, we ask that RMS address the following matters, and advise us in writing as to the steps that RMS will be taking to address them:
 - a. respond to NSW Environment Protection Authority (**EPA**) and our client's requests (herein) for information on water quality in the hanging swamps and the stormwater basin (see paras 19-20);
 - b. immediately verify any impacts of the project on the hanging swamps at Bullaburra;
 - c. identify the cause of these impacts;
 - d. respond to, remediate and prevent further impacts on the swamps, including by notifying relevant parties to take appropriate actions, such as the contractor(s) and Commonwealth Environment Department (with regard to protecting matters of national environmental significance (**MNES**)).
9. Please respond as a matter of priority. We provide further details below.

Specific impacts recorded

10. We draw your attention to the following results from our client's ecological testing at the Bullaburra Swamps compared and a reference site at Mount Hay Swamps (**reference swamps**). Further information is provided in **Attachment A**:
 - a. *Mean Electrical Conductivity (EC ($\mu\text{S}/\text{cm}$))*: Bullaburra Swamps show an increase of 156.75 $\mu\text{S}/\text{cm}$ (nearly 5 times) compared to reference swamps;
 - b. *Mean Temperature (Temp)*: an increase of 4.1 °C (nearly double) from Bullaburra Swamps compared with reference swamps;
 - c. *Mean pH units (pH)*: Bullaburra Swamps show an increase of 1.9 pH units compared with reference swamps.
 - d. *Mean bicarbonate*: 34.9 mg/L at Bullaburra Swamps compared to below detection at the reference swamps;

- e. *Mean sulfate*: 67.3 mg/L at Bullaburra Swamps compared to below detection at the reference swamps);
- f. *Mean calcium*: 34.7 mg/L at Bullaburra Swamps compared to below detection at the reference swamps);
- g. *Mean potassium*: 6.6 mg/L at Bullaburra Swamps compared to below detection at the reference swamps).
- h. *Macroinvertebrate community structure*: clear differences between Bullaburra Swamps and reference swamps.

11. Our client also conducted water quality sampling at Bullaburra Swamps from 26/06/2014 to 23/03/2015. This work showed significant increases in Electrical Conductivity (**EC**) and pH over the nine month period. It was particularly notable that on the final sampling day (23/03/2015) there was a high water flow draining from the stormwater basin, which increased EC and pH substantially, as shown in the table below.

Water quality parameter	26/06/2014	20/02/2015	19/03/2015	23/03/2015
EC	199.1	299.5	380.2	471.8
pH	7.2	7.2	6.89	9.22

12. It is well established that high levels of EC and pH are associated with urban runoff and stormwater infrastructure in the Sydney Basin and impair aquatic ecosystem health. These monitoring results are therefore of significant concern to our client.

Local council recommendations

13. Our client is also concerned that RMS did not adequately address recommendations to avoid damaging the swamps raised by Blue Mountains City Council (**the Council**) in 2011.¹ The Council’s 2011 submission on the current stormwater system advised RMS that the outflow structure and associated rock spillway would place the works directly within (and directly impacting) the Fernland/Sedgeland EEC.² Council also advised RMS that locating ‘the discharge outlet directly at the head of the swamp is likely to initiate channelisation of the entire swamp’ and have significant impact on the swamp and its habitat values for threatened species.³

¹ Blue Mountains City Council, *REF Submission – Bullaburra East Alternative Stormwater Drainage Design*, 16 February 2011.

² Blue Mountains City Council *REF Submission – Bullaburra East Alternative Stormwater Drainage Design* 16 February 2011, p. 2.

³ Blue Mountains City Council *REF Submission – Bullaburra East Alternative Stormwater Drainage Design* 16 February 2011, p. 3.

14. To address the risks of channelisation and pollution, Council recommended:
 - a. *'that an appropriate energy dissipater should be constructed downstream of the confluence of the basin and the local channel'*; and
 - b. RMS *'undertake feasibility into the piping of stormwater a further 200m to a discharge point below the swamp where the creek is less erodible in nature. Additional costs of the piping would be offset by the preservation of the biodiversity values of the swamp and the need for a lesser degree of engineering to integrate the stormwater....'*
15. Our client is concerned that the impacts predicted by the Council are now occurring and that the environmental values of EECs and threatened species habitat in the Bullaburra swamps are deteriorating as a result of the project.

EPA involvement and request for information

16. We are instructed that damage to the swamp was raised by our client and discussed at a meeting of the Council's Highway Water Issues Group on 11 November 2014. EPA representatives attended this meeting. We note that the EPA regulates road construction and associated pollution.
17. Our client wrote to the EPA regarding this matter on 20 November 2014.
18. We understand that EPA inspected the site the week of 13 January 2015.⁴
19. We also understand that, in January 2015 or earlier, the EPA requested information from RMS and the road contractor (Seymour Whyte Constructions) regarding water quality in the Bullaburra stormwater basin.
20. The EPA undertook to pass on information received from RMS in response. Our client has yet to receive further information from the EPA (or RMS) on water quality in the stormwater basin.
21. On behalf of our client we would be very grateful if you could provide us with any information you have in relation to water quality in the hanging swamps, and water in and from the Bullaburra stormwater basin, including pre-approval baseline data and subsequent testing data.

The project site

22. We note that the highway upgrade at Bullaburra is divided into two separate contracts, Bullaburra East and Bullaburra West. We understand that Bullaburra East is to be completed in late 2015 and that Bullaburra West was completed in November 2014.⁵ However, on current information we do not

⁴ Email to BMCS from Peter Morrall, Senior Operations Officer, Metropolitan Infrastructure, EPA, 16 January 2015.

⁵ <http://www.rms.nsw.gov.au/projects/sydney-west/blue-mountains/bullaburra-great-western-highway-upgrade/index.html>.

know whether water from Bullaburra West also flows to the stormwater basin. If so, Bullaburra West may also be implicated in the damage observed.

Part 5 assessment requirements

23. As you know, the Infrastructure SEPP permits road construction works, alterations or additions to an existing road and environmental management works, by or on behalf of RMS, without local council consent (cl. 94). It also permits public works for stormwater management without consent (cl. 111).⁶
24. Before approving development that is permitted without consent, the EP&A Act requires RMS to 'examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity.' (s. 111) For example, RMS must consider 'whether there is likely to be a significant effect on [threatened] species, populations or ecological communities, or [their] habitats'. (s. 111(4))
25. The EP&A Regulation 2000 spells out more specific factors to be considered in environmental assessments under Part 5 (cl. 228). For example, these include likely impacts on local ecosystems, environmental degradation and pollution impacts.

Endangered ecological communities (EECs) and threatened species

26. The Bullaburra hanging swamps 'located below the basin discharge outlet' forms an EEC, as noted in the supplementary stormwater REF (p iii).
27. The hanging swamp is protected under state and federal threatened species laws as:
 - a. 'Blue Mountains Swamps in the Sydney Basin Bioregion'
 - o a vulnerable ecological community under the *Threatened Species Conservation Act 1995* (NSW) (**TSC Act**);⁷ and
 - b. 'Temperate Highland Peat Swamps on Sandstone'
 - o an EEC under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**).⁸
28. The supplementary REF (2010) stated that no threatened flora or fauna species were recorded at the subject site (De Quency Road basin location).⁹
29. However, in addition to the protected status of the swamp itself, we are instructed that the swamp is known habitat for at least two threatened species:

⁶ See SKM, Great Western Highway Bullaburra East Alternate Stormwater Detention Basin *Supplementary Review of Environmental Factors*, November 2010, p ii.

⁷ See <http://www.environment.nsw.gov.au/threatenedspeciesapp/profile.aspx?id=20071>.

⁸ Australian Government information sheet, *Nationally threatened species and ecological communities – Temperate Highland Peat Swamps on Sandstone* (2005) at www.environment.gov.au

⁹ SKM, Great Western Highway Bullaburra East Alternate Stormwater Detention Basin *Supplementary Review of Environmental Factors*, November 2010, p iii and Appendix A.

- a. Giant Dragonfly (*Petalura gigantea*); and
- b. Blue Mountains Water Skink (*Eulamprus leuraensis*).^{10,11}

Review of Environmental Factors to inform Part 5 assessment and approval

30. To fulfil these Part 5 assessment requirements, we note RMS commissioned (among other things):¹²

- a. the 'main REF' for the Bullaburra East project (July 2009);
- b. a Stormwater Drainage Investigation report (June 2009);
- c. a supplementary REF for Alternate Stormwater Design (Nov. 2010).

31. The main REF for Bullaburra East (2009) was done before the single-basin stormwater design was proposed. Nevertheless the main REF noted:

*The construction works may create a short to medium term siltation risk in downstream riparian vegetation and aquatic vegetation communities (Refer to Section 6-4 for details on local hydrology and drainage). These risks are manageable and can be reduced using best practice erosion and sedimentation controls and site rehabilitation techniques during and following construction of the new road.*¹³

32. The Stormwater Drainage Investigation proposed a three-basin design.¹⁴

33. The supplementary stormwater REF (2010) assessed the impacts of an alternative, single-basin design (identified on the basis of further design, consultation and a further study by SKM¹⁵). The 2010 REF adopted the single basin at De Quency Road as the preferred option.

34. We understand that RMS approved the Bullaburra East project in November 2009. It is unclear when the stormwater basin was approved. We presume that the basin had a subsequent Part 5 approval, under cl. 111 of the Infrastructure SEPP, rather than somehow being part of the original 2009 Part 5 approval.

35. On behalf of our client we request a copy of the relevant approval and any subsequent REF. We note that even if a further REF was undertaken, the Council's concerns about basin design and impacts remained unresolved.

¹⁰ Australian Government information sheet, *Nationally threatened species and ecological communities – Temperate Highland Peat Swamps on Sandstone* (2005) at www.environment.gov.au

¹¹ The 2010 REF also identifies potential habitat for the Grey-headed flying fox (*Pteropus poliocephalus*) and for micro-bats: SKM, Great Western Highway Bullaburra East Alternate Stormwater Detention Basin *Supplementary Review of Environmental Factors*, November 2010, p iii.

¹² Available at: <http://www.rms.nsw.gov.au/projects/sydney-west/blue-mountains/bullaburra-great-western-highway-upgrade/project-documents.html>.

¹³ NGH environmental, *Great Western Highway Upgrade – Bullaburra East – Review of Environmental Factors*, Vol. 1 Main Report (July 2009), p 80.

¹⁴ Lyall and Associates (June 2009), Appendix F to the main REF.

¹⁵ Sinclair Knight Merz, *Great Western Highway Upgrade, Bullaburra East Drainage Design Report 20%* (SKM, 2010), Appendix B to SKM's Supplementary Stormwater REF (Nov. 2010).

Impacts and factors considered in supplementary stormwater REF (2010)

36. The 2010 REF predicted the following environmental impacts (among other things) in addressing the factors under the EP&A Regulation, cl. 228:¹⁶
 - a. 'Nil' impact on threatened species and EECs, and noted: 'Impacts on threatened species, populations, endangered ecological communities and their habitats have been assessed as not significant.' (per cl. 228(2)(g))
 - b. 'Some [minor negative] impact on the ecosystems of the locality would result from the proposed vegetation clearing and impact from the discharge' (per cl. 228(2)(b));
 - c. Minor negative impact on habitat of protected fauna (under the NSW *National Parks and Wildlife Act 1974*) from clearing (per cl. 228(2)(f));
 - d. 'Nil' degradation of the quality of the environment (per cl. 228(2)(i));
 - e. 'Nil' pollution of the environment: '...provided the safeguards described in section 5.2 are properly implemented.' (per clauses 228(2)(k)-(l)).
37. Section 5.2 in the 2010 REF contents is entitled 'Summary of safeguards and management measures'. However, we cannot locate section 5.2 online.
38. Safeguards for flora and fauna under the 2010 REF (p 31, 4.6.4) included vehicle and machinery movements, weed control and limited tree removal.
39. As for hydrology and drainage safeguards, the 2010 REF notes (p 21, 4.2.3): 'No further safeguards and management measures other than those identified in Section 6.4.3 of the Bullaburra East REF are required.' The latter include further stormwater basin site investigations, water quality control devices, flood prevention mechanisms and gross pollutant traps.

Not all project documentation is publicly available

40. We have accessed the public project documents for Bullaburra East that are available via the RMS website. This includes the original (2009) and supplementary stormwater (2010) REF reports.¹⁷
41. However, not all project documentation is publicly available (in some cases because website links are broken). In particular:
 - a. RMS Part 5 approval determinations for the project are not published;

¹⁶ SKM, *Great Western Highway Bullaburra East Alternate Stormwater Detention Basin Supplementary REF*, 'Appendix A – Consideration of the clause 228 factors and MNES'.

¹⁷ <http://www.rms.nsw.gov.au/projects/sydney-west/blue-mountains/bullaburra-great-western-highway-upgrade/project-documents.html>. We note that a supplementary REF was prepared in Feb. 2013 regarding the pedestrian bridge at Bullaburra. This is a separate part of the project and we understand the 2013 REF does not consider the hanging swamp.

- b. Section 5.2 of the 2010 REF 'Summary of safeguards and management measures' is not published (i.e. pp 50-62 are missing);
 - c. Appendices B and C to the 2010 REF are not published. These relate directly to the stormwater basin design and the flora and fauna assessment of MNES.
42. More generally, to improve the transparency of public decision-making, we request that RMS publish Part 5 approval determinations as standard practice, and ensure all documentation and appendices are available online.
43. We would be grateful for a written response at your earliest convenience. If you have any questions arising out of this letter, please contact me on (02) 9262 6989 or by email at nari.sahukar@edonsw.org.au. Thank you for your attention to this matter.

Yours sincerely,

EDO NSW



Nari Sahukar
Solicitor

Attachments

- A. PowerPoint presentation summarising the outcomes of a water quality study conducted by BMCS Threatened Species Officer, commissioned by BMCS. (We are instructed that no water quality study of this hanging swamp occurred before the roadworks began.)
- B. Two aerial photographs:
 - i. Bullaburra Swamps (Jan. 2010) - showing the general visual condition of the swamp before construction of the Highway upgrade began;
 - ii. Bullaburra Swamps (Aug. 2014) - showing the location of the stormwater retention basin built as part of the upgrade project, and channelisation of the swamp that has occurred since 2010.
- C. Two close-up ground photographs showing the channelisation of the Bullaburra Swamps (dated 10 January 2014):
 - o 'Headcut-1' and
 - o 'Headcut-5'.