



Office of Water

Director, Strategic Assessment
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7 February 2011

Our ref: ER21318
Your ref: MP10_0205

Attention: Michelle Cramsie

Dear Ms Cramsie

**Gwandalan residential subdivision – Project Application (MP10_0205)
Environmental Assessment**

I refer to your letter of the 13 December, 2010, inviting comment on the Environmental Assessment (EA) for the above project. The NSW Office of Water (NOW) has reviewed the EA and provides detailed comments in Attachment A, with recommended conditions of approval in Attachment B.

If you wish to discuss please contact me on telephone (02) 2904 2572 at the Newcastle office.

Yours sincerely

A handwritten signature in blue ink that reads "m. mignanelli".

Mark Mignanelli
Manager Major Projects and Assessment

**NOW COMMENTS ON ENVIRONMENTAL ASSESSMENT
GWANDALAN RESIDENTIAL SUBDIVISION – PROJECT APPLICATION (MP 10_0205)**

Water Licences under the Water Management Act and Water Act.

The *Water Management Act 2000* (WMA) governs sustainable and integrated management of water sources across the State. Licensing of water is regulated under the *Water Management Act 2000* for areas which are subject to a Water Sharing Plan, and the *Water Act 1912* for water sources not covered by a Water Sharing Plan. At present, surface water systems in this area fall within the South Lake Macquarie Water Source, under the Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources. Groundwater within the area is regulated under the *Water Act 1912*. The project involves the construction of underground service infrastructure. While the EA suggests groundwater is not present at the site, interception of groundwater and take of water is a licensable activity under relevant water legislation.

Riparian Zone Management

The proposed development removes a number of first order streams, with roads becoming the primary pathway for water. These roadways drain via a swale to the lower portion of the site, into a proposed detention basin. This detention basin uses an existing dam, reshaped to provide macrophyte beds for water quality as well as detention functions. The section of watercourse from the swale to the detention basin will require a designed inlet, as the velocity of flow in this area will be above that for which the stream is adjusted. This design will also need to consider the junction with the catchment from the south east park area, to ensure that there is no potential for an erosional knick point to form. Re-establishment of riparian zone vegetation upstream and downstream of the detention basin should also occur, including the watercourse through the South East Park, if required.

The EA provides concept plans of the detention basin only. Detailed design of the detention basin, riparian zone rehabilitation and the reshaping of the creek entrance (referred to in section 7.1 of Appendix H) should be undertaken to the satisfaction of NOW prior to commencement of construction. The proposed detention basin should be lined to ensure that infiltration to groundwater does not occur.

Water Quality Management

The development has the potential to result in water quality impacts to Lake Macquarie, both during construction and on an ongoing basis. The construction of the GPT and the detention basin are designed to minimise water quality impacts. A Monitoring strategy, assessing the input of nutrients to Lake Macquarie during storm events, should be considered, addressing total phosphorus, total nitrogen, total suspended solids and gross pollutants.

A Maintenance plan for the detention basin and gross pollutant traps is required to protect water quality levels downstream and in Lake Macquarie.

**NOW RECOMMENDED CONDITIONS OF APPROVAL
GWANDALAN RESIDENTIAL SUBDIVISION – PROJECT APPLICATION (MP 10_0205)**

1. Water Licensing Requirements

- 1.1. An authorisation under the *Water Act 1912* or the *Water Management Act 2000* is to be obtained from the NSW Office of Water with the appropriate purpose identified for any activity relating to the taking of or interception of groundwater prior to that activity commencing.
- 1.2. Prior to construction of the detention basin, the proponent should contact NOW to determine if a surface water licence is required.

2. Riparian Zone Management

- 2.1. A Riparian zone management plan should be prepared to the satisfaction of NOW for the stream passing through the south east park, and below the swale drainage. The plan should include:
 - 2.1.1. Detailed design of the stormwater detention basin, including volume of water to be stored, appropriate lining;
 - 2.1.2. Design of the inlet structure to the detention basin, sized to avoid erosion;
 - 2.1.3. A riparian zone assessment and rehabilitation plan for the creek through South East Park into the detention basin, and downstream of the detention basin; and
 - 2.1.4. Detailed design of the rehabilitation proposed for the creek outlet to Lake Macquarie.

3. Water Quality Management

- 3.1. A Water Quality Maintenance and monitoring strategy should be developed to demonstrate the effectiveness of the GPT and detention basin. This should include:
 - 3.1.1. Monitoring of water quality (total phosphorus, total nitrogen, total suspended solids and gross pollutants) downstream of the detention basin during and after storm events; and
 - 3.1.2. A plan scheduling maintenance of the detention basin, detailing what maintenance is required, and who is responsible for undertaking the activity.