Case Study: Goose Gully wetlands

Eastwood Estate, Goose Gully wetlands

Project description

Preliminary planning and development of the Eastwood Estate began over 30 years ago. The area is a popular place for people from Bairnsdale to live. The development consists of around 900 residential lots, 18km of roads, 40 ha of developed public open space and two bridge structures. Eastwood has a population of around 2,500 residents and facilities including commercial centre with a supermarket, specialty shops and small medical centre. A retirement village and East Gippsland’s largest primary school, two childcare centres, kindergarten and a veterinary hospital are also found within the precinct. The land was originally bushland, then farmland prior to residential living. Runoff from this area following significant rain originally followed natural low points before flowing into the Mitchell River floodplain. Since being converted into a residential area, the amount of runoff has become much higher. This is a result of natural land being covered with roads, car parks, footpaths and houses. This increase flow has been managed using various different features which slow the water down (attenuate flows) and treat the pollution from the urban area using Water Sensitive Urban Design (WSUD). Since being developed approximately two thirds of the land drains in an easterly direction ultimately flowing into the Goose Gully wetlands. These wetlands work in conjunction with other landscaped features (like swales and sediment ponds) to treat the majority of urban runoff from the development.

Examples: new residential development, new industrial development, mixed-used re-development.

Project details

Project area (size in ha):
Eastwood Estate is a subdivision located in Bairnsdale, Victoria. It is approximately 230 hectares.

Project location:
Eastwood Estate is a subdivision located in Bairnsdale, Victoria, sited on the north side of the Mitchell River floodplain between the Lind and Princes Highway bridges. The subdivision borders Clifton Creek (the Backwater) and Goose Gully.

See map on next page.
Proximity to waterway(s):
Wetlands were constructed in the downstream end of Goose Gully, a small ephemeral waterway running through the estate discharging as a tributary to Clifton Creek (the Backwater). Approximately 500m downstream from the confluence of Clifton Creek and Goose Gully, Clifton Creek joins with the Mitchell River just upstream from the Princes Highway bridge.

Have the potential impacts of flooding on the development area been considered and assessed? Please explain.
The main land within the development is not flood prone as it sits well above the Mitchell River floodplain. However the Goose Gully wetlands and some of the openspace and lower recreational area are subject to flooding.

How does your project impact on your waterway(s)?
Increase in urban areas leads to an increase in impervious surfaces and runoff volumes, which impose high pressure on the natural resources.

Examples: will your project generate excess stormwater runoff or sediment loads? Will it have a direct impact on the surrounding waterways?

Which of the key principals apply to the project? How?
The key principal that applied was (step 2) to minimise the impacts by careful planning and design, and the use of WSUD.

Key principals include:
1. Avoid adverse impacts, particularly through vegetation clearance, additional pollutant loading,
barrier construction or structural change to the waterway;

2. If impacts cannot be avoided, **minimise** impacts by careful planning, design and management (this is the most frequent case, and the management of stormwater through WSUD systems is included within); and

3. If clearing or significant modification of the waterway must occur, the works should be **offset** through provision of financial contribution or in-kind work to the Council to significantly enhance other values of the waterway.

**How can you avoid the impacts and help protect our waterways?**

Implementation of WSUD strategies. A WSUD system consisting of a series of wetlands will be constructed.

Benefits:
- Removal of sediments and nutrients
- Attenuation of stormwater flows
- Protection of downstream systems
- Establishment of amenity/recreational value for the community
- Enhanced habitat for fauna

*Examples: flood protection, local stormwater management, end of the line systems, riparian zone strategy.*