

Knoxfield Redevelopment

Wetland Proposal – Options and Recommendation

About the Site

The Knoxfield development site is located at the corner of Burwood Highway and Scoresby Road, Knoxfield. This 19.2 hectare site was formerly used as a Department of Environment, Land, Water and Planning (DELWP) horticultural research facility. It was rezoned to a Comprehensive Development Zone (CDZ) in 2018 allowing for the delivery of a residential and mixed-use development to support the growing population of the Knox City municipality.

Following the rezoning, Development Victoria commenced community consultation and a planning process to help inform development of a draft Masterplan for the site. The aim is to develop a community with a diverse range of new housing, and open spaces, integrated with the surrounding neighbourhood.

Background

During the early planning process, Development Victoria considered a range of options for the existing man-made dam on the site, recognising its history, environmental values and connection to the community.

The man-made dam of 1.6 hectares provides habitat for birds, amphibians, plants and micro-organisms including the endangered Blue-billed Duck. It is Development Victoria's intent to respect and where possible enhance these valuable attributes through the redevelopment process.

The development site is also adjacent to Blind Creek. In the event of significant rain, the northern part of the site is at risk of flooding. The site needs an effective stormwater management plan to help prevent flooding, improve stormwater quality and protect the Blind Creek Waterway.

Development Victoria identified three key objectives when considering the options:

- 1 Protect and enhance the natural habitat, including the endangered Blue-billed Duck.
- 2 Identify an effective stormwater management solution to reduce the risk of flooding, reduce any potential contamination of Blind Creek and deliver best practice stormwater management for the site.
- 3 Ensure that any waterbody on site can be integrated into the overall development and is accessible to the community.

Step 1 – Early Assessment

Development Victoria engaged expert hydrologists from Engeny Water Management to assess the condition of the dam and its potential repurposing within the new development. The review found two serious concerns with the current structure - safety and environment. Due to the safety issues, the dam is currently fenced off to prevent public access.

Key risks with existing dam

Safety	<p>The dam is at risk of collapse and is structurally unsound. This has been particularly noted during recent flooding of the dam throughout April and May 2020.</p> <p>The dam is very deep with steep banks — creating a very dangerous safety risk if it is made accessible to the public. There is a significant risk of injury or drowning.</p>
Environmental	<p>The dam does not provide for suitable stormwater treatment and water retardation. This means untreated stormwater continues to flow directly into Blind Creek and is a flood risk to the adjacent light industrial area, which is lower than the dam. You can read the report here.</p>

Given this assessment, Development Victoria engaged Peter Gannon of Ecocentric Environmental Consulting and Glenn Ottrey of Engeny Water Management to look at alternative options that would deliver a balance of environmental, social and economic outcomes.

Step 2: Development and Assessment of Options

Option 1: Retain the existing dam and create an adjacent Water Sensitive Urban Design treatment wetland.

Repair and upgrade of existing dam, with a new adjacent wetland built to manage stormwater treatment and retardation.

Key risks	
Safety	Risk of flooding to adjacent school during large storm events.
Environmental	<p>Severe impact on existing flora and fauna. The dam would need to be drained and walls rebuilt. The existing flora and fauna would be destroyed. There will be a period of time where there is no habitat available on the site while the dam is emptied and the necessary construction works take place to make it safe.</p> <p>The gradient of the slopes of the existing dam walls will need to be softened significantly with additional soil, this is likely to result in a significant loss in overall open-water habitat area currently utilised by Blue-billed Duck for foraging.</p>
Key Benefits	
Stormwater	Meets the stormwater treatment targets required by the planning scheme.
Environmental	Habitat around the dam edge can be improved and replanted to establish a vegetated margin once the construction works are completed on the dam.

Option 2: Establish a new wetland system in stages

Build a new wetland system to accommodate existing flora and fauna, establish breeding habitat for the Blue-billed Duck and achieve best practice stormwater management. This would be developed through a staged redevelopment with construction of open-water wetland habitat in the northeast of the site prior to any redevelopment of the dam for Water Sensitive Urban Design treatment systems and provision of Blue-billed Duck breeding habitat.

Key risks	
Economic	This option requires a significantly higher investment than that of other options, but achieves significantly better environmental and social outcomes, as outlined below.
Key Benefits	
Stormwater	<p>Meets the stormwater treatment targets required by the planning scheme.</p> <p>Provides a range of settling, sediment and water retention ponds to treat stormwater, mitigate flooding and protect Blind Creek.</p>
Environmental	<p>Allows for staged construction, meaning the new habitat wetland could be built and established prior to any works on the dam allowing flora and fauna to transition safely to the new site, guided by technical experts. This would provide continuous habitat on the site during the development process.</p> <p>Provides an enhanced habitat for the endangered Blue-billed Duck through targeted planting, and a diverse environment that will encourage more wildlife to live and visit. Creating a safer outdoor area for local residents to enjoy.</p>
Social	The proposed new wetlands provide improved public access, with paths and viewing platforms so the community can enjoy the environment. This provides an opportunity for the wetlands to be truly integrated into the neighborhood for people to enjoy and protect.

Step 3: Recommendation and Masterplan Process

Based on the assessments, Development Victoria determined that the best outcome for the short and long term protection and enhancement of the fauna and flora on the site was, option 2, a new wetlands system delivered in a staged process. The development of a new wetlands system best meets the three objectives established for assessment of the options (page 1).

This solution best balances the numerous, and sometimes conflicting requirements of the site including safety, the environment, stormwater management, community access and amenity. Development Victoria shared these designs with the community during the engagement phases of the Masterplan process.

For more information:
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