



CRC for Water Sensitive Cities

# Enhancing Our Dandenong Creek Program

Location: Melbourne, VIC



Case Study — Prepared by Cooperative Research Centre for Water Sensitive Cities, September 2018



Business Cooperative Research Centres Programme

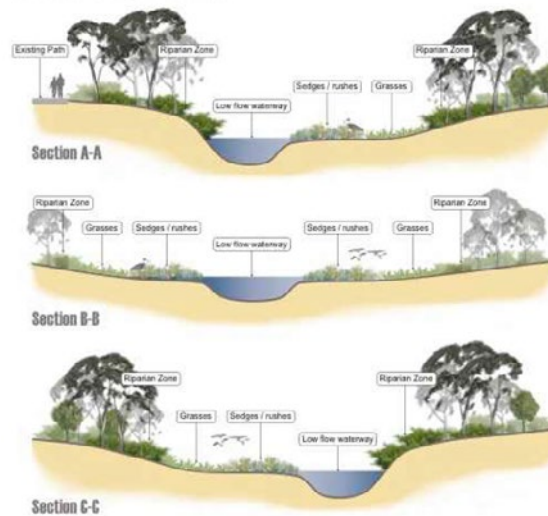
## Insight

Revitalising the Dandenong Creek for best community outcomes

## Project description

This case study delivers a range of waterway enhancements that the community helped to identify. Projects include daylighting a section of Dandenong Creek, creating new fish habitats, installing signage and public amenities, and working with industry to control pollution.

### Landscape Design - Sections



## The drivers

Protecting public health and improving the waterway condition of Dandenong Creek

- Working with the community to identify priority creek enhancement projects that improve the amenity of this popular public open space, which has become increasingly degraded due to urbanisation and industrial landuse within the catchment.
- Revitalising the creek and improving its amenity value by removing the existing underground stormwater pipe and allowing water to move through a variable, vegetated and natural surface environment.
- Reducing significant water quality threats, through pollution detection, behaviour change and collaborative enforcement programs.
- Improving the aquatic ecosystem values by creating fish habitats, coupled with a breeding program to develop a sustainable population of threatened species.
- Applying an alternative, risk-based and outcomes-focused approach to wet weather sewer spills management, to deliver greater benefit to both the environment and community when compared with a conventional upgrade of a non-compliant sewer.



Cross-sections of the naturalised meandering creek

### What does this case study demonstrate?

Each case study has been selected to demonstrate specific solutions, benefits or enabling structures that support the creation of water sensitive cities. This case study focuses on:

Waterway naturalisation

Ecosystem health

Amenity and urban greening

Community engagement

## The innovations

*Enhancement of the Dandenong Creek driven by community engagement and input*

- **Community driven investments** – A Natural Amenity Working Group was established in 2014 to represent a range of local community views, which helped to understand the values of the waterway and to identify priority enhancement projects. Continued community engagement and input is sought through interactive websites and community planting days.
- **Daylighting Dandenong Creek** – A 830m piped section of the creek will be removed between HE Parker Reserve and the Heathmont railway line. It will be replaced with a meandering open channel that more closely represents the creek’s original form and shape.
- **Creation of new habitats for vulnerable native fish** – New fish habitats will be constructed and revegetated at 20 sites along the creek. These sites will provide suitable water regimes, habitats, protection and connectivity to support communities of native dwarf galaxias and Yarra pygmy perch, which have been translocated from key sites as part of a carefully designed fish stocking program.
- **Pollution prevention and detection** – Melbourne Water, EPA Victoria, Knox City Council and South East Water are working together to investigate pollution into Dandenong Creek. The Pollution Detection and Prevention Program involves conducting detailed water quality investigations, dye testing to help identify potential pollution pathways, and investigating stormwater and sewer infrastructure condition using CCTV.
- **Improved amenity through billabong revitalisation** – The project will identify, prioritise, design and construct billabongs along the Dandenong Creek corridor, to improve amenity and recreate important creek habitats.
- **Signage and storytelling** – Conversations with Heathmont History Group and the Wurundjeri and Bunurong Traditional Owners helped to develop an understanding of the history of Dandenong Creek, which was then told through the installation of 15 interpretive signs.
- **Innovation in sewerage management** – The Enhancing Our Dandenong Creek approach is both an innovative and efficient way of addressing the risks and impacts associated with wet weather sewer spills. The risk-based approach provides an alternative to capital-intensive conventional augmentations. It demonstrates innovation across policy, engineering and community engagement aspects.




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Enhancing our Dandenong Creek program brings community together (image courtesy of Melbourne Water)





## The outcomes

 <b>Cities providing ecosystem services</b>	 <b>Cities as water supply catchments</b>	 <b>Cities comprising water sensitive communities</b>
<ul style="list-style-type: none"> <li>• <b>Recreation of natural waterway</b> – ‘Daylighting’ 830m of piped stormwater has provided new habitats.</li> <li>• <b>Improving the local biodiversity</b> – Billabong revitalisation, channel rehabilitation and fish habitat creation improves environmental niche availability, which increases local flora and fauna biodiversity.</li> <li>• <b>Nature can take over</b> – As biodiversity increases, so will the opportunity for natural revegetation along the creek.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Reduction in stormwater pollution</b> – A combination of creek enhancement and pollutant reduction from the industrial catchment has reduced the volume of pollutants within the creek.</li> <li>• <b>Increased flow capacity</b> – By creating an open channel flow, the cross-sectional area of the flow is no longer restricted to that of a pipe.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Storytelling and signage</b> – The rich Indigenous and European local history of the creek is shared through signage, creating an engaging and informative experience.</li> <li>• <b>Engagement and feedback from the community driving outcomes</b> – The local community has driven the investment in this program through ongoing engagement.</li> <li>• <b>Industry involvement</b> – A focus on engagement with the local industries has helped to improve awareness and reduce stormwater pollution.</li> </ul>



Drone footage during construction, daylighting 830m of Dandenong Creek (image courtesy of Melbourne Water)



## The lessons

- **Build it and they will come** - Improvements to instream habitats creates a greater range of niche spaces for local fauna and flora to occupy. As a result, local biodiversity can naturally increase. The recreation of fish habitats and translocation of key threatened species has been successful with recent monitoring indicating successful breeding of dwarf galaxias.
- **Investments in waterway health can have multiple benefits** – The daylighting and restoration of a natural channel, billabongs and fish habitats not only provides for improved ecological conditions, but also improves amenity of a popular public open space, increases conveyance capacity of the channel and allows for broader community engagement and input.
- **Empowering the community** – Adopting a participatory approach to decision-making and planning provides water authorities with the opportunity to improve their transparency and empower the community. This ultimately leads to greater community awareness regarding sewerage, waterway and water management issues, with increased trust and reputational benefits for water utilities.
- **Collaboration** – In addition to the delivery of on-ground works, the project also achieved significant social benefits among the organisations involved. The complexity and multiplicity of stakeholders and institutions makes delivering collaborative projects a challenge. The role of champions and trusted experts to advocate and provide a credible voice of support is critical to the success of the project. This, coupled with increased transparency, developed genuine buy-in from stakeholders. These benefits have enabled the successful and timely completion of the program, but will continue in future collaborative efforts.



Drone footage during construction, daylighting 830m of Dandenong Creek (image courtesy of Melbourne Water)

## Business case

Costs	Benefits
<ul style="list-style-type: none"> <li>• \$14.5 million Melbourne Water project.</li> </ul>	<ul style="list-style-type: none"> <li>• A naturalised waterway that promotes community engagement and results in improved water quality, habitat, biodiversity, natural aesthetics and storytelling.</li> </ul>





## Transferability

This is transferable to sites where a piping system is buried beneath the ground, and a long passageway of land is available for naturalisation. This project is also a good model for community engagement and Indigenous history.

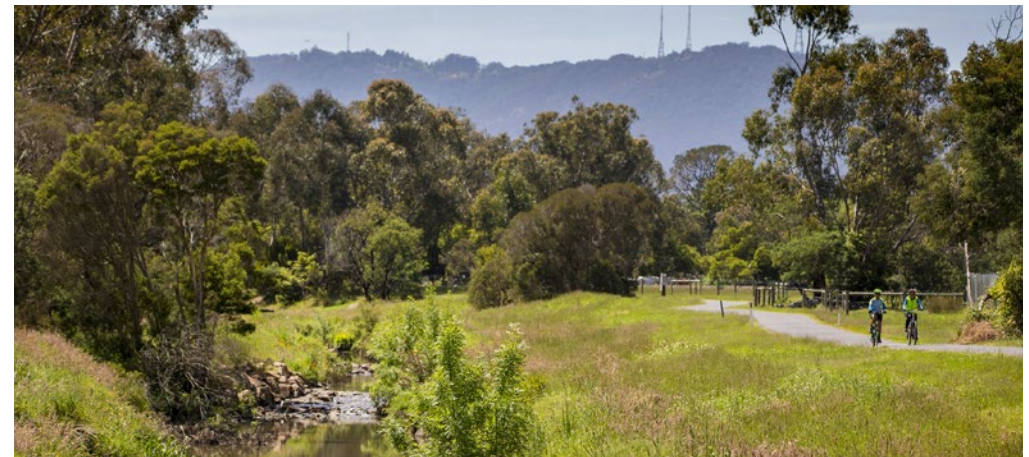
## Project collaborators

- Melbourne Water
- EPA Victoria
- Knox City Council
- Maroondah City Council
- City of Monash
- City of Whitehorse
- First Friends of Dandenong Creek
- Heathmont Bushcare
- Knox Environment Society
- Heathmont History Group
- Wurundjeri Tribe Council
- Bunurong Land Council
- Parks Victoria
- Living Links
- South East Water
- Yarra Valley Water

## Additional information

More information on Enhancing our Dandenong Creek can be found at:

- [Melbourne Water's Enhancing our Dandenong Creek website](#)
- [First Friends of Dandenong Creek](#)
- [Melbourne Water news article](#)



Dandenong Creek

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