



The value of restoring urban drains to living streams

Industry Note
Program A: Society
Project A1.2

Waterway restoration work can involve substantial costs, and if water sensitive urban design concepts such as the creation of living streams are to be widely adopted, it is important to demonstrate that the benefits from restoration are greater than the costs.

Many urban streams have been highly modified over time. Vegetation clearing, channelisation, and the creation of open drains have occurred as a result of urbanisation and population growth. The consequences include decreased water quality and loss of native habitat and biodiversity. These drains, while often effective in flood mitigation, were commonly designed without consideration of ecological and aesthetic functions. There is a growing recognition of the importance of these values and functions and in many locations work is underway to restore urban drains and create fully functioning natural waterways and wetland ecosystems. Depending on where you come from, these initiatives can be referred to as “living streams”, “healthy waterways” or “natural channel designs”.

A study of the amenity benefits of the Bannister Creek living stream project in the suburb of Lynwood in Perth, Western Australia provides evidence that there is a positive net effect on house prices in the neighbourhood of the living stream. While there was an initial negative impact on local house prices during the construction stage of the project, after the natural wetland ecosystem has established, the median home within 200m of the restoration site increased in value by \$17,000 to \$26,000 above the trend increase in house values in the area. This gain more than offsets the initial outlay of the restoration project and early project disturbances to surrounding residents. The effect (period effect) of the restoration project, controlling for the general increase (trend effect) in house prices, is shown in Figure 1. At the time of the restoration work there is a negative effect but this negative effect is completely reversed within a few years and then becomes a substantial net benefit.

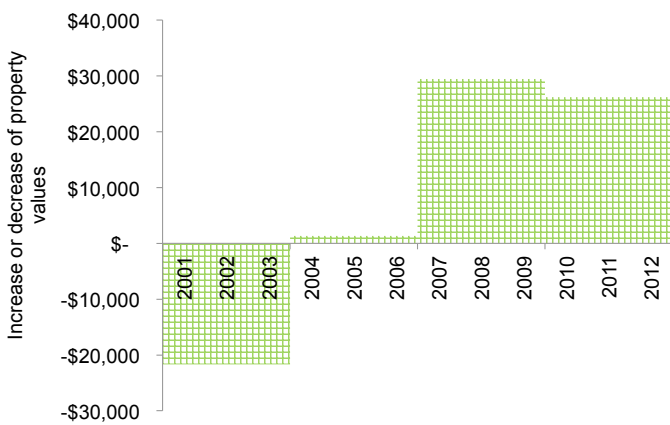


Figure 1. Impact of Bannister Creek living stream on the value of a median residential property within 200m of the project site.

About the Bannister Creek Living Stream project

The project was initiated by the local community and involved the rehabilitation of a section of the Bannister Creek main drain into a “living stream”. Anticipated benefits of a living stream at the location included:

- improving water quality in the catchment
- slowing water flow into the system such that flow velocity during high rainfall events was at an acceptable level for public safety
- improving local amenity.

The first stage of the restoration project, the focus of this study, was completed over the period 2000–2002 and involved work on a 320m section of the main drain. Restoration work involved giving the creek a more natural shape with meanders, riffles (rocky, shallow areas), gentle sloping banks and planting fringing vegetation. Substantial earthworks were undertaken to reshape the existing steep banks and erosion control matting was used to stabilise the stream banks. The transformation from traditional main drain to living stream can be seen in Figure 2.

Header photo credit: Department of Water (WA)



Improvement of creek water quality and ecosystem function

To assess the impact of the restoration project, the research team used two approaches to measuring house price change that are well established in the real estate literature: the hedonic price method and the repeat sales methods. The potential impact of the restoration was estimated within 200m of the project, which is approximately halfway between the restoration site and other local public open space. Modelling took into account the effect of general price inflation, the overall trend change in the price of homes in the area, and the unique attributes of the individual homes.

This research was conducted as part of a CRC for Water Sensitive Cities project *Valuation of economic, social and ecological costs and benefits (Project A1.2)*.

The aim of this project is to provide decision makers with the knowledge and tools that will allow them to make decisions about water infrastructure investment that strike the best balance between economic, social and environmental outcomes, so that benefits to the broader community are maximised.

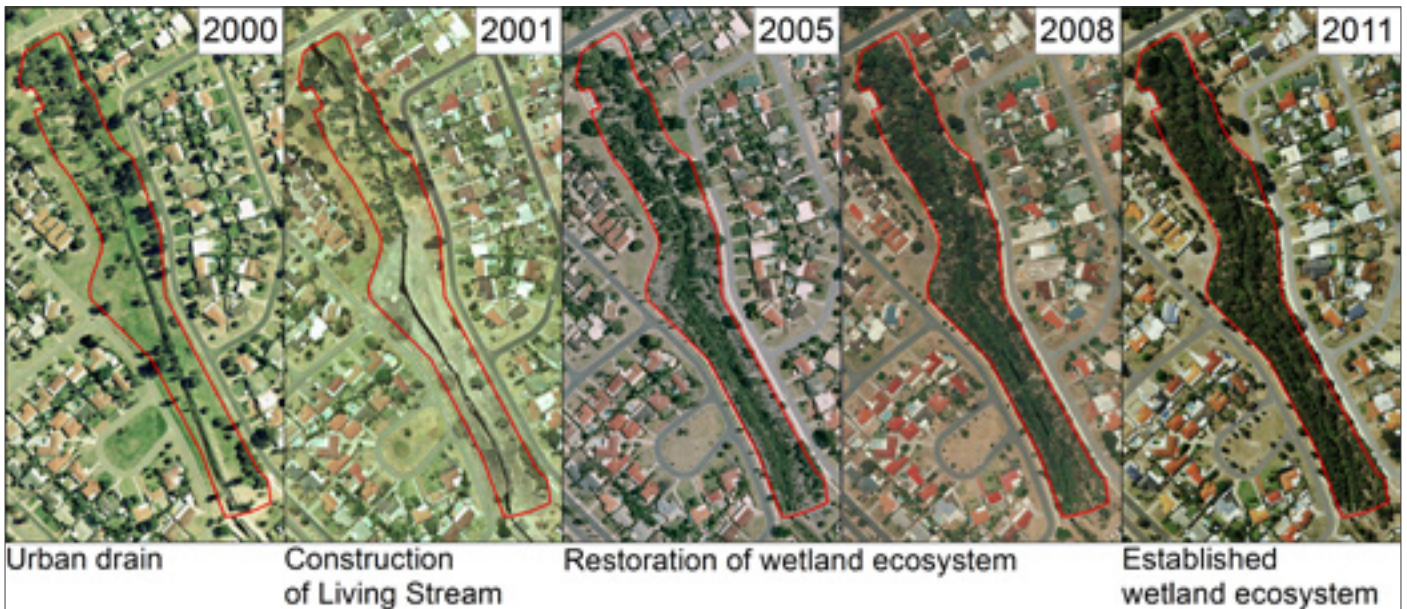


Figure 2. Evolution of Bannister Creek Living Stream project from 2000 to 2011



Website:
<http://watersensitivetocities.org.au/programs-page/society-program-a/project-a1/project-a1-2-valuation-of-economic-social-and-ecological-costs-and-benefits/>



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