



CRC for
Water Sensitive Cities

Greening the Pipeline - Williams Landing Pilot Park

Location:
Melbourne,
VIC



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



Australian Government
Department of Industry,
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Business
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Insight

A design that showcases the potential of disused infrastructure in providing community open space with an integrated stormwater design.

Project description

Greening the Pipeline is the transformation of a heritage listed Main Outfall Sewer reserve into a 27km linear park in Melbourne's west. The project is delivered through organisational partnerships (Melbourne Water, Wyndham City Council, City West Water, VicRoads), community engagement, and supported by the Greening the West initiative.

The Williams Landing Pilot Park is the first project of Greening the Pipeline, which has transformed a section of the heritage-listed Main Outfall Sewer (MOS) reserve into a local parkland which demonstrates how the transformation can connect the community, provide additional recreational opportunities, provide urban cooling and treat and use urban stormwater for irrigation.



The original Main Outfall Sewer in Melbourne's west

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:

Water sensitive parks and open spaces

Amenity and urban greening

Water literacy and behaviour change

The drivers

Showcase the potential of the Federation Trail and Main Outfall Sewer reserve to serve as a green linear parkland:

- **Lack of open space in area** - The local area in Wyndham has a lack of public open space. By creating green space in the corridor, the water industry was able to create a much needed community asset.
- **Heritage infrastructure corridor transformed into functional space** - Taking inspiration from projects such as New York's High Line, Greening the Pipeline's vision is to create a vibrant space that will connect communities, enhance active transport options for the region, manage water sensitively and provide a unique space to meet, play and relax.
- **Use of pilot project to gain momentum** - The Williams Landing Pilot Park aims to showcase the potential of the Main Outfall Sewer (MOS) reserve as a green linear parkland that takes a more holistic approach to water management, enhances community liveability, and connects the community to the heritage and history of the MOS.






Community opening of the pilot park, with the old Main Outfall Sewer (MOS) visible at top right

The innovations

Integration of stormwater treatment cells into parklands for irrigational reuse for the surrounding vegetation.

- **Local stormwater harvesting system within parkland** - Local stormwater flows from Wyndham Waters residential estate are diverted and captured by modifying an existing junction pit. The stormwater is then transferred to 'primary storage', using two 11m lengths of slotted 525mm pipe located within the Main Outfall Sewer.
- **Raingardens** - Raingardens are used for the treatment of locally harvested stormwater flows.
- **Reuse storage zone** - 51m length of slotted 525mm pipe is located within the MOS invert to provide approximate 28m² of storage, before pumping the treated stormwater to the irrigation system.
- **Stormwater irrigation scheme** - Treated stormwater is pumped from the storage zone into the irrigation system, watering trees, plants and the new parkland.
- **Sharing knowledge at the Pilot Park** - Education is important for the project in connecting the community and industry with the history of the MOS and the benefits of integrated stormwater systems for the environment. Following the completion of the Pilot Park, numerous site visits have been held to share learnings with the industry and the community. This includes with the Bangkok Municipal association and Tianjun Government Leaders program through the UN Global Compact Cities program, the Ecocity Global Summit, China's Ministry of Housing and Urban Renewal Development, Clearwater, Truganina South Primary School students.

The outcomes

 Cities providing ecosystem services	 Cities as water supply catchments	 Cities comprising water sensitive communities
<ul style="list-style-type: none"> • Reduced pollutant loads to receiving waterways – raingardens are used to treat stormwater from the local catchment and reduce the pollutant loads entering downstream waterways. • Reduced urban runoff – capture and reuse of stormwater will reduce the volume of runoff from the local area, which will provide cumulative benefits to waterways under stress from increased volume and frequency of flows. • Reduced urban heat island effect - greening of a concrete structure provides positive microclimate benefits. 	<ul style="list-style-type: none"> • Stormwater as an alternative water source at a local scale – stormwater low flows are diverted from an existing stormwater pipeline to be stored, treated and reused for irrigation of the new parkland. 	<ul style="list-style-type: none"> • Engaged decision-making – a number of community and stakeholder engagement activities were held over two months to inform the design of the Pilot Park for Williams Landing. The public website also provides up-to-date information to keep the community informed and aware of upcoming opportunities to get involved. • Sharing knowledge – numerous site visits at the Pilot Park have been held to share learnings with the international industry, local industry and the community. • Educated citizens – the Greening the Pipeline website provides a wealth of information regarding the project and its benefits, including managing water sensitively.

The lessons

- **Early investment in a pilot project can help to justify further investment** - A good measure of public/stakeholder interest and feedback may be attained by constructing a pilot park over a fraction of the entire length of the site.
- **Transforming old into new** – It is possible to transform a 19th century decommissioned sewer asset into a 21st century water sensitive community space.
- **Add time to a project which isn't business as usual** - An important lesson was how much time it takes to work through organisational barriers when implementing a different type of project that hasn't been done before. Allowing time for collaboration and supporting champions of change is crucial here.



Community engagement



Business case

Costs

- approximately \$2 Million;
- supported by a grant from the State Government

Economic benefits

- Property uplift of nearby residential areas as the amenity of the area has been improved.
- Improved access to facilities on either side of the reserve. For example, there is now a saving of 10 minutes for a resident on the north side of the reserve to walk to the local shopping centre at the south side.
- Increased visitation to the area/region by encouraging more cyclists and walkers to use the Federation Trail.

Environmental benefits

- Increased habitat with the addition of 50 trees and 1,200 square metres of landscaping.
- Reduction in stormwater discharge into downstream waterways by capturing, treating and reusing stormwater to irrigate the park itself.
- Use of recycled stormwater for irrigation reducing reliance on potable water.
- Use of solar lights.

Social benefits

- Increased opportunities for social connection/engagement as it provides a safe and accessible open space for the surrounding community.
- Increased safety as the once isolated and fenced off reserve has now been activated, allowing for more increased visitation and passive surveillance.
- Enhanced connection with Melbourne's history as the park celebrates the heritage history of the MOS with an interpretive sign and clear views of the MOS.
- Improved amenity as the once bare channel and reserve have been transformed through landscaping.

Health benefits

- The park offers physical and mental health benefits through the provision of exercise equipment, a safe place for children to play, green space for sports, and a connected space to the existing Federation Trail shared path and other council paths. Before and after visitation surveys show an increase in visitation of 105%.
- Urban cooling with the planted trees and irrigated turf.
- A community garden creates a built environment that supports healthy food behaviours.

Transferability

There may not be many locations which consist of heritage listed water infrastructure which is located in unused linear easements and provide an opportunity for a continuous linear open space. However, this project demonstrates that underutilised green easement corridors and decommissioned open drains across our urban areas can be transformed into the valued community assets. This project also demonstrates the value of early pilot projects to gain momentum and community involvement and support of further investments.

Project collaborators

- Melbourne Water
- Victoria State Government
- Wyndham City Council
- VicRoads
- City West Water
- GHD Woodhead

Awards

- Victoria Water Association 2017 – Finalist



Aerial photograph of the pilot park, showing the MOS at top left

Additional information

More information on the Greening the pipeline project can be found at:

- [Greening the Pipeline website](#)
- [Greening the West website](#)

