

Drainage for Liveability- Greening our drains for a water sensitive city



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Department of **Water**



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Summary

Drainage as a wicked problem

Changing the status quo

A shared vision through partnering

Joint guidance notes



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Drainage as a “wicked problem”

- Multiple agencies responsible for different aspects
- No clear link between land planning decisions and drainage water quality
- Legacy contamination issues
- Combination of open channels and closed pipes
- Groundwater and surface water
- Not a “closed” physical system
- Multiple stakeholders and expectations



Drainage as a “wicked problem”

Therefore: traditional science/engineering thinking will not achieve desired outcomes

Need to shift from “solution” to ongoing, long term “intervention”



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A photograph showing a flooded urban street in Hong Kong. Several green and white buses and cars are wading through the deep floodwater. The water reflects the lights from the vehicles and the surrounding buildings. Lush green trees line the left side of the street, and modern buildings are visible in the background.



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Typical drainage assets



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Findings of a recent review of reform options:

No perfect institutional/regulatory model for delivery of drainage

Potentially a lack of institutional coordination and/or shared long term vision for drainage

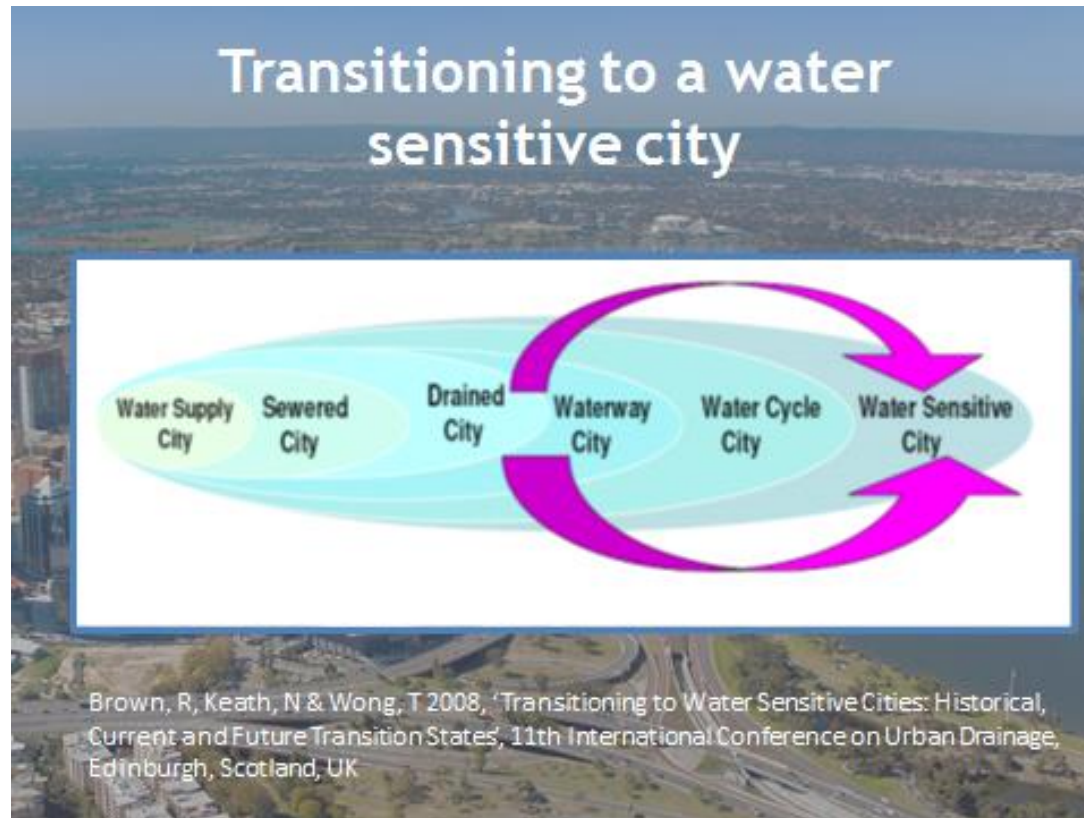
Previous reform attempts resulting in Memoranda of Understanding did not achieve all desired results



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The shared vision: an ongoing prompt for our decision making and actions



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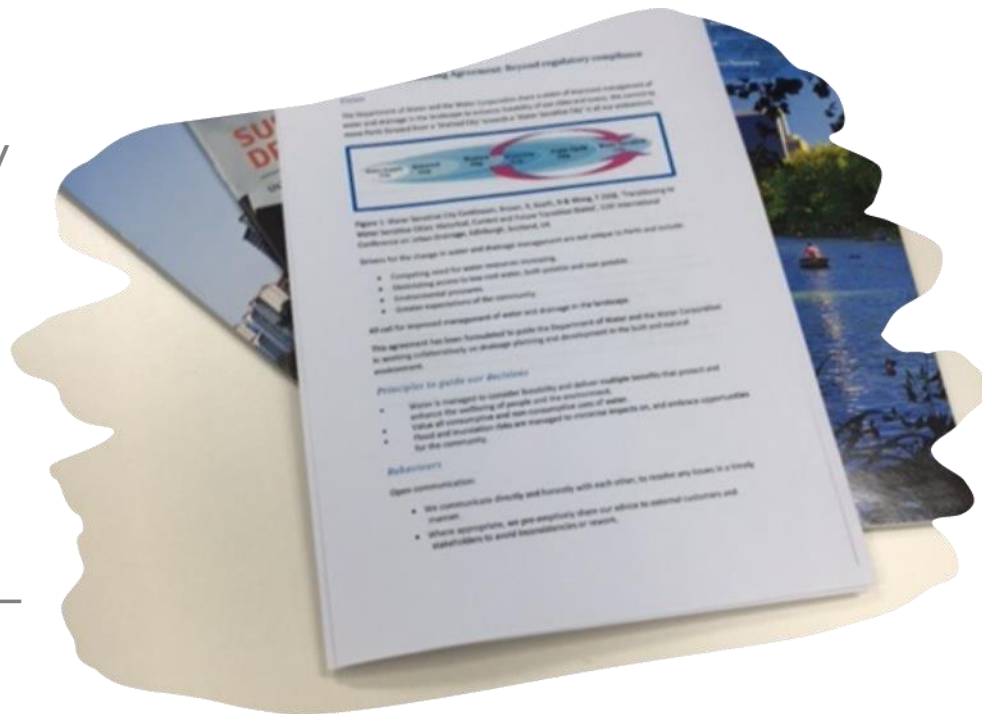


Drainage Partnering Agreement - Beyond regulatory compliance

Based on Alliance management principles of shared responsibility for outcomes.

- Shared vision
- Principles
- Behaviours

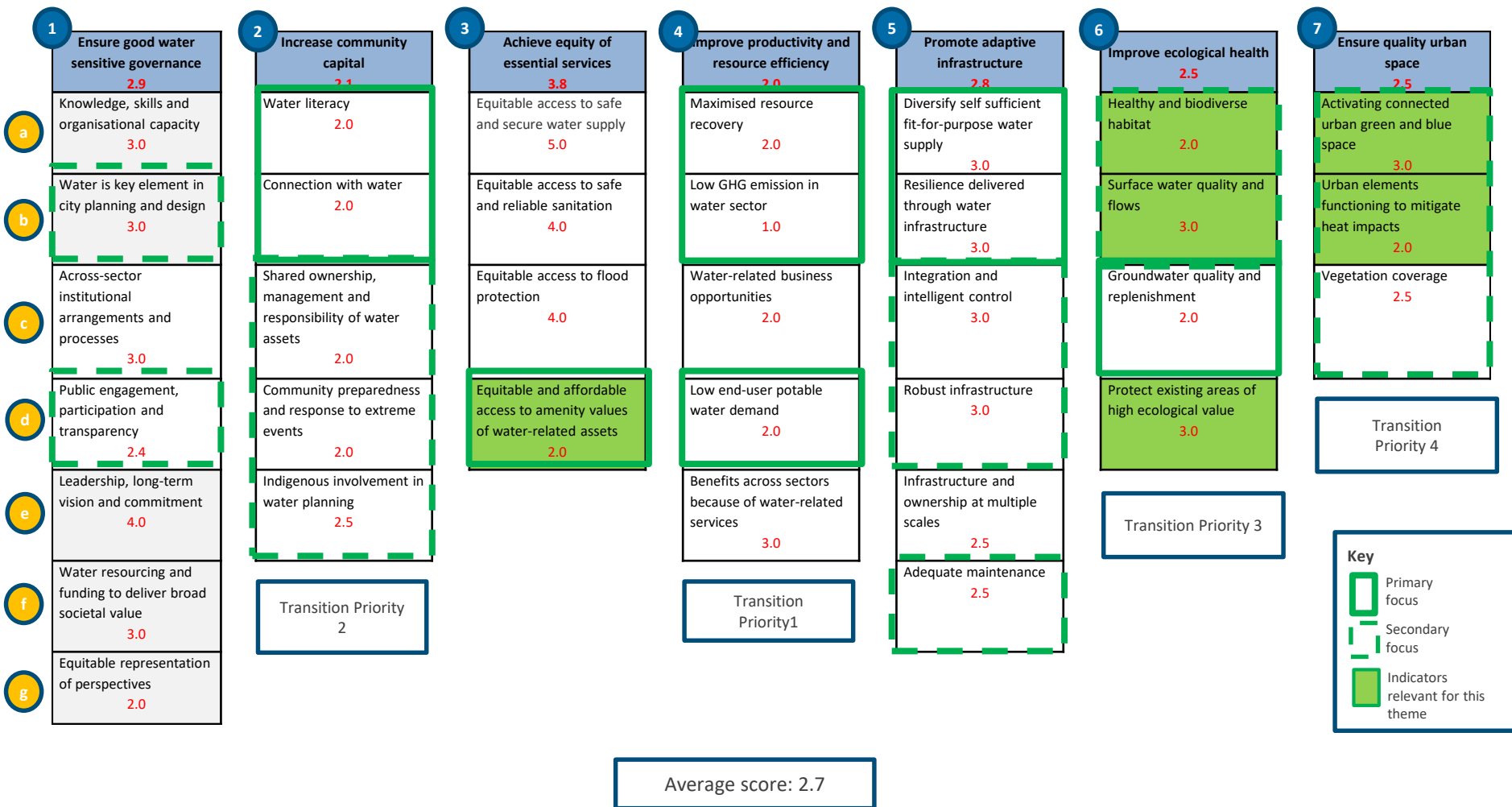
“Beyond regulatory compliance” –
Sue Murphy



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Water Sensitive Cities Index goal areas and indicators – greater Perth benchmarking results



What does this mean?

- Greater alignment of advice from Water Corporation and the Department of Water and Environmental Regulation.
- Recognition of the greater role of both organisations “beyond regulatory compliance” in contributing to liveability outcomes for a Water Sensitive Cities.
- A proactive approach to stakeholders and opportunities for improved drainage outcomes.



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Official launch of the Drainage for Liveability Program

<https://www.watercorporation.com.au/drainageprogram>

Drainage to make most of green spaces

A NEW drainage basin project to make better use of public green spaces was launched in Morley last week.

The State Government and the Water Corporation collaborated to form a Drainage for Liveability Program, with the first project being a 'pop up' park proposed by the City of Bayswater off Russell Street.

Water Minister Mia Davies said the department would provide urbanised communi-

ties with more recreational areas.

"While drains and drainage basins serve a vital purpose in protecting our homes and businesses from flooding, we should make the most of their capacity to provide attractive green spaces for our communities," she said.

"Opening up areas previously inaccessible to the community is possible by developing drains into appealing local

assets that make our communities better places to live.

"Russell Street Pop Up Park will be a temporary use of open space while the City of Bayswater investigates a longer-term plan for a network of green spaces, linking key parts of the suburb including the bus port, shopping centre and residential areas."

The other area considered was the Wellington Road Compensation Basin in Yokine.



Department of Water's Tim Sparks, Colin Holt MLC, Michael Sutherland MIA, Water Corporation's Suzanne Brown and Bayswater Mayor Barry McKenna at the Russell Street basin.



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Drainage for Liveability Guidance

- Provide short concise information to aid in the design and implementation of drainage infrastructure.
- Intended to enhance the value of drainage areas to communities across WA.
- Outline stormwater management practices and positions endorsed by both organisations.
- Promote progressive water sensitive cities.



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Living/urban streams: a joint approach

Drainage for Liveability Fact Sheet

Living Streams in Water Corporation assets

Purpose

This fact sheet, jointly developed by the Department of Water (DOW) and Water Corporation (WC), provides basic technical information required to design and construct Living Streams in Water Corporation assets (new or enhanced, rural or urban). It is to be used as guidance with each situation considered on its merits. Other drain owners are encouraged to use this as a basis for design however other documents may also be relevant and inform design.

Objectives

Living Streams should be created as multiple use corridors to achieve a wide range of benefits to the community and the environment. The objectives of Living Streams include:

- Flood control and conveyance
- Erosion and sediment control
- Establishing healthy ecosystems
- Creating diverse habitat
- Improving water quality

(e.g. public open space, roadways and road reserves, waterways, drainage reserves).

- Set aside sufficient land in the planning process to achieve these objectives.

Morphology

- Ensure that the morphology replicates a stable natural stream with a diversity of ecological habitats.

Vegetation

- Retain existing native vegetation where possible.
- Establish tree canopy at suitable width to shade the Living Stream and limit vegetation density within the channel.
- Establish understorey plantings outside the bankfull channel to enhance ecological benefits.
- Design and select vegetation in the minor flow channels appropriately (e.g. native sedges) to still allow conveyance and maintenance

- Provide appropriate maintenance access.
- Use vegetation and landscaping (in preference to structures and fences) where feasible to restrict access to hazardous areas.
- Provide recreational access to the water's edge where safe and beneficial to recreational activities.

Analysis and Design

Proposals for the construction of Living Streams are required to provide a comprehensive suite of documentation demonstrating the data collection, investigation, design and maintenance of the Living Stream.

- Engineering plans, sections, details and specifications.
- Planting design drawings, cross sections, species and schedules, vegetation community descriptions and photos.
- Hydrologic and hydraulic modelling

- Management agreement between the Water Corporation and the Local Authority
- Design Report outlining the investigation and design methodology including critical aspects governing the final design.

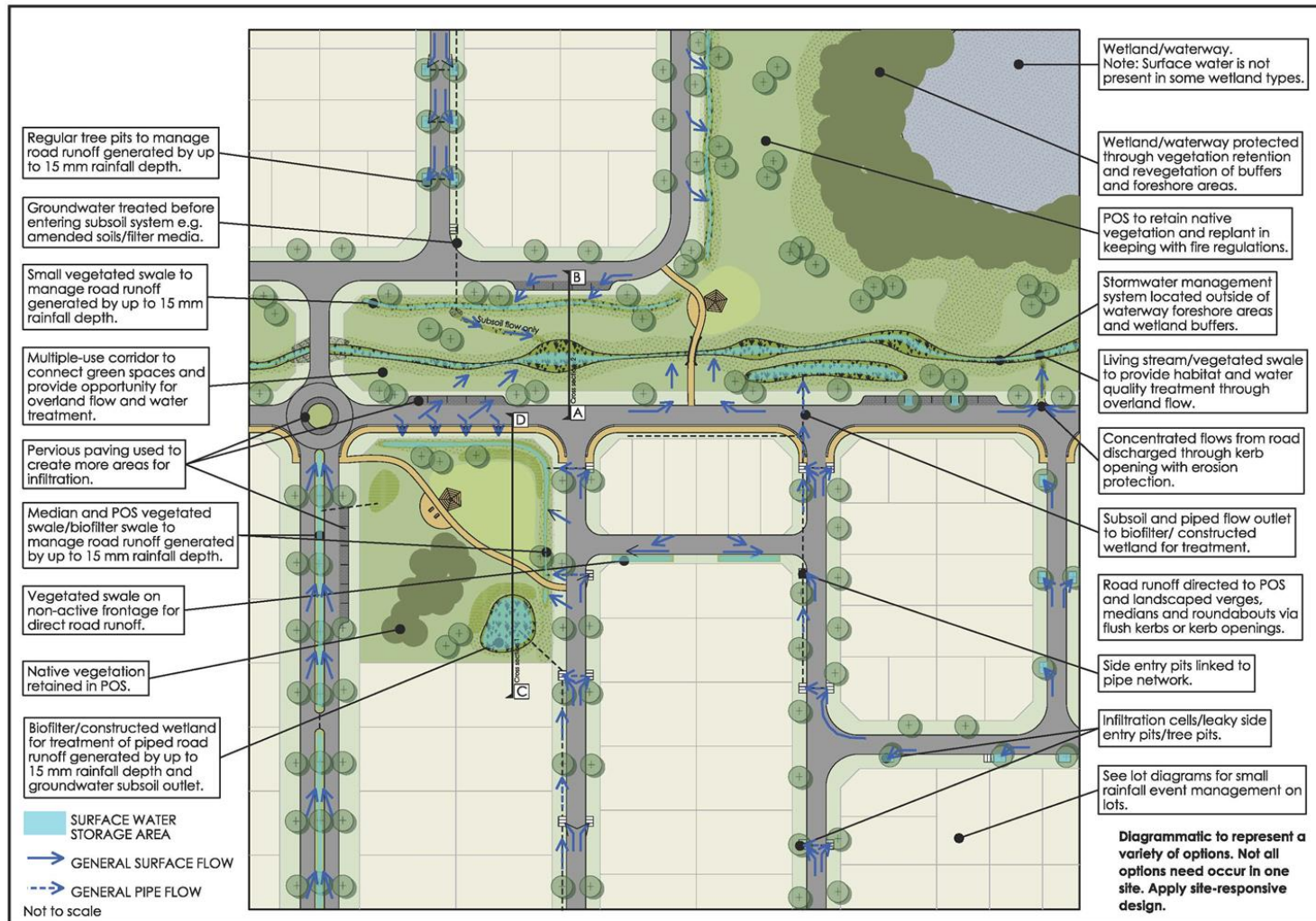


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Drainage for Liveability

(managing small rainfall events at source)

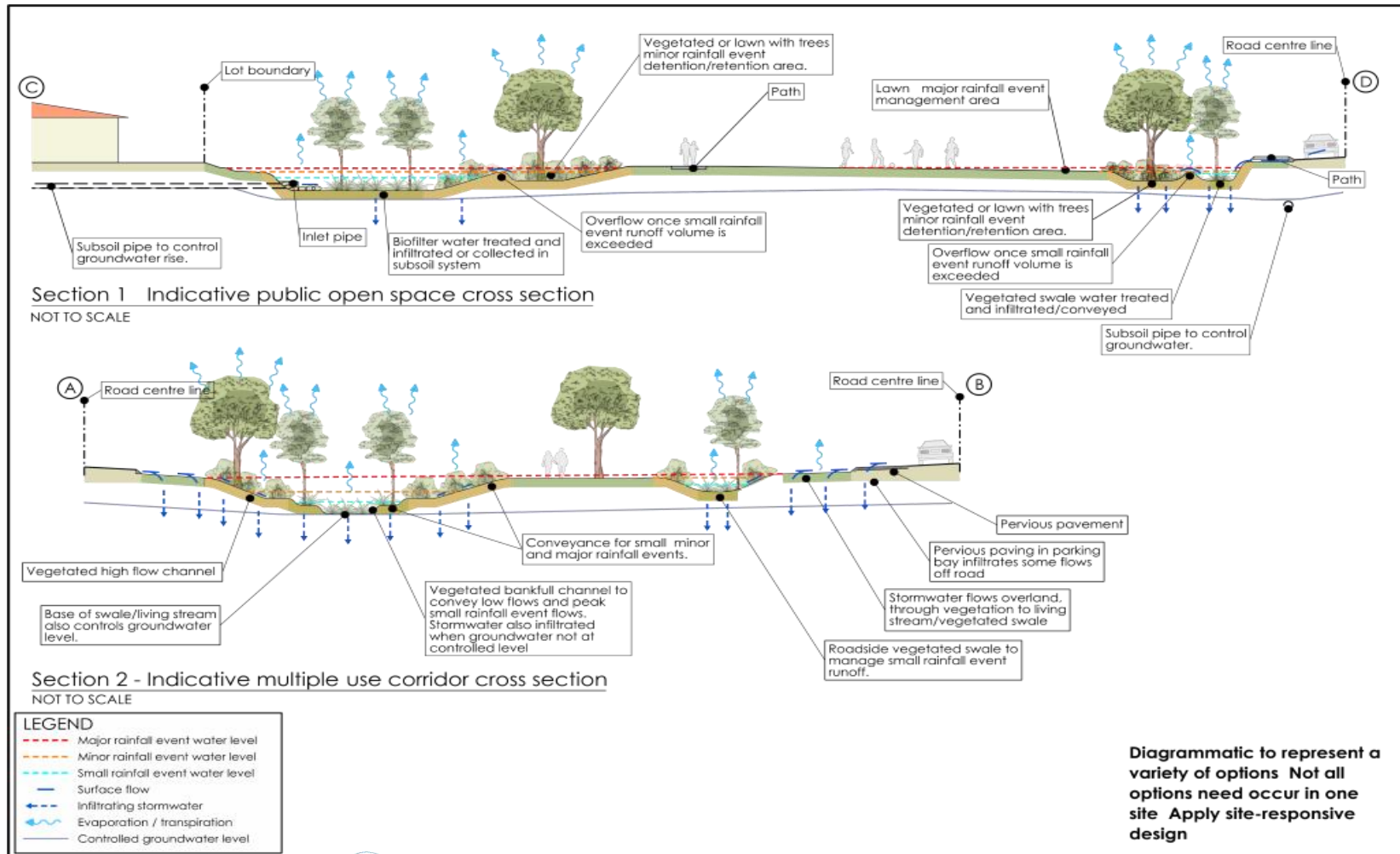


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Drainage for Liveability

(Multiple use outcomes)



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Brentwood Main Drain conversion: Before and after



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Russell St, Morley, before and after



Wellington Parade basin conversion: Before and after



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Perth airport train station precinct development and drain realignment



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Lambertia Creek, Lynwood



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Other examples?

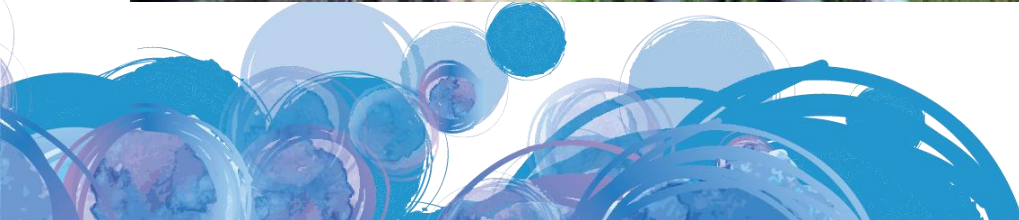


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What's possible?

New York's High Line Trail, a park on an old railway



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Whats possible?

Aguascalientes's La Linear Verde, a park along an old gas pipeline



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Questions?



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