HAVE YOUR SAY

Consultation Draft

IMPLEMENTATION GUIDANCE

Off-site Urban Stormwater Management—*Alternative locally appropriate solutions to support achieving the outcomes of* the *State Planning Policy State Interest Water Quality 2017*

September 2017

Prepared by: Environmental Planning Unit, Department of Environment and Heritage Protection

Disclaimer

This document has been prepared with all due diligence and care, based on the best available information at the time of publication. The department holds no responsibility for any errors or omissions within this document. Any decisions made by other parties based on this document are solely the responsibility of those parties. Information contained in this document is from a number of sources and, as such, does not necessarily represent government or departmental policy.

If you need to access this document in a language other than English, please call the Translating and Interpreting Service (TIS National) on 131 450 and ask them to telephone Library Services on +61 7 3170 5470.

This publication can be made available in an alternative format (e.g. large print or audiotape) on request for people with vision impairment; phone +61 7 3170 5470 or email <library@ehp.qld.gov.au>.

Citation

EHP. 2017. Consultation Draft, Implementation Guidance - Off-site Urban Stormwater Management

September 2017

Foreword

The purpose of the State Planning Policy (SPP), and its state interest statements and policies, is to "*secure a liveable, sustainable and prosperous Queensland*". It requires that the various state interests are reflected in local planning instruments, regional plans and development decisions that:

- strengthen our economy,
- promote strong communities,
- protect our environment,
- wisely manage our resources, and
- inform and respond to investment in infrastructure.

The *SPP* state interest statement for water quality is that "*The environmental values and quality of Queensland waters are protected and enhanced*".

State interest policies are expressed as performance outcomes to encourage innovative solutions and provide for flexibility of implementation, enabling local governments to adopt locally appropriate solutions that meet community needs and expectations.

The water quality state interest includes a policy that requires that applicable development meet post-construction stormwater management design objectives. This policy can be achieved either by stormwater management on-site or off-site through an alternative and locally appropriate solution that achieves an equivalent or improved water quality outcome to the stormwater management design objectives of the SPP (table B , appendix 2).

Off-site Solutions provide flexible options to achieve the SPP state interest; in the case of the post construction phase stormwater management design objectives, in-lieu of on-site compliance.

This document provides information for Local Governments and industry considering the implementation of Off-site Solutions.

The provision of case studies by the Mackay Regional Council and the Port of Brisbane Pty Ltd is gratefully acknowledged.

.

Contents

1. Introduction 1
2. Purpose 1
3. SPP requirements 2
4. Planning 2
5. Local Government Policies and Planning Scheme Policies 6
6. Developer adoption of off-site solutions 7
7. Evaluation, monitoring and reporting 7
8. Case studies 8
    Port of Brisbane Pty Ltd 8
    Mackay Regional Council 10
    Ipswich City Council 11
9. Definitions 11

1. Introduction

Alternative locally appropriate solutions (Off-site Solutions) in accordance with Policy 5 of the *State Planning Policy state interest for water quality 2017* (SPP), provide flexible options to achieve the post-construction phase stormwater management design objectives, in-lieu of on-site compliance.

Off-site solutions referred to in this implementation guidance are a voluntary mechanism whereby Local Governments collect a fee from developers in lieu of on-site stormwater management (in-lieu fee) to achieve SPP compliance for the post construction phase.

Off-site solutions should only be considered where it is demonstrated to be a superior outcome or where it cannot be feasibly delivered on-site -i.e. a hierarchy approach.

1. On-site
2. Partial on-site, balance off-site
3. Full off-site—noting the residual on-site requirements as per section *3.SPP requirements*, below.

They are intended to be voluntary for both a local government and developer, with neither being able to require that an off-site solution must be adopted.

The fee collected is used by local governments to implement off-site solutions to meet the development compliance requirements. Because these fees are in-lieu of on-site non-trunk infrastructure, this fee is separate, and in addition, to any trunk infrastructure charges levied by Council under an adopted charges resolution.

Implementing off-site solutions can have benefits such as:

- achieving greater environmental outcomes than what could be delivered through on-site solutions alone (i.e. superior outcome);
- reducing the maintenance burden of large numbers of small-scale stormwater treatment facilities managed by local government or private landowners;
- providing an option for development to achieve the State Interest on highly constrained sites; and
- providing multiple benefits to the community and the environment.

Off-site solutions include Living Waterways (Healthy Land & Water, 2014) approaches - involving well-designed urban green infrastructure that provides multiple benefits, protecting and enhancing our natural water systems while enhancing the livability of cities and towns and the resilience of water supplies.

In adopting off-site solutions, residual on-site development requirements must be addressed including, for example, flooding, hydrologic management (to protect receiving waterways geomorphic stability and aquatic ecosystems), landscaping and litter control.

2. Purpose

The purpose of this document is to provide guidance to local government and industry when implementing the SPP State Interest Water Quality policy 5 (b) that states:

"At the post-construction phase, development:

> *a) achieves the applicable post-construction phase stormwater management design objectives on-site, as identified in tables B (appendix 2); or*
> ***b) achieves an alternative locally appropriate solution off-site that achieves an equivalent or improved water quality outcome to the relevant stormwater management design objectives in table B (appendix 2)".***

3. SPP requirements

In considering the implementation of off-site solutions, the following must be addressed in accordance with the SPP.

- Application is limited to the post-construction phase of development. Off-site solutions do not remove the responsibility for achieving construction phase requirements.
- Off-site solutions must demonstrate the achievement of equivalent or improved water quality outcomes (*environmental equivalence*), to the relevant SPP post construction phase stormwater management design objectives at Appendix 2, Table B.
- Off-site solutions do not remove other post-construction phase stormwater management responsibilities at a development site; including for example flooding, achieving hydrologic objectives, landscaping and litter control.

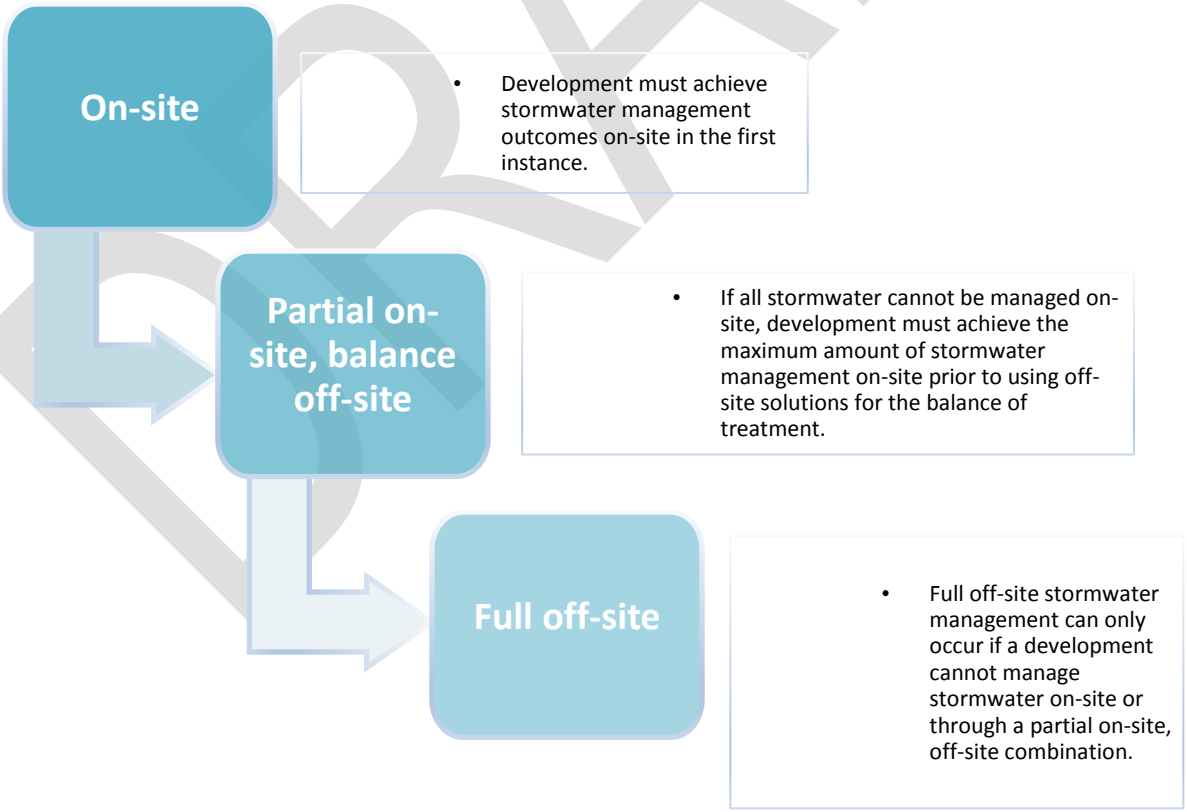
4. Planning

Post construction phase planning for off-site solutions should initially prioritise delivering stormwater management on-site.

Off-site solutions should only be considered where it is demonstrated to be a superior outcome, or where it cannot be feasibly delivered on-site - i.e. a management hierarchy approach should be adopted, as follows:

- on-site; or
- partial on-site, balance off-site; or
- full off-site-noting residual on-site requirements.

Figure 1. Hierarchy for stormwater management



A Local Government Planning Scheme should include assessment criteria that requires that on-site solutions are to be achieved and that where it is demonstrated that this is not feasible, off-site solutions can be considered. The assessment criteria relevant to off-site

solutions should refer to a Planning Scheme Policy (PSP) for information and parameters relating to the financial contributions required from a developer in-lieu of on-site compliance. As a general rule, the financial contribution should not be more than the value of an equivalent on-site solution that would otherwise be accepted by the local government.

The PSP may state where on-site compliance is not feasible, partially feasible or where local or catchment planning has identified the location and type of off-site solutions which will deliver *environmental equivalence* to the SPP stormwater management design objectives. This will inform the consideration of off-site solutions.

Developers considering using an off-site solution should seek pre-application advice from the Local Government confirming whether an off-site solution would be appropriate and supported, based on the management hierarchy, and the above mentioned PSP assessment criteria.

Considerations should include:

- whether an off-site solution would be supported in full, part or at all
- what stormwater treatment needs to be managed on-site or off-site (e.g., type of pollutants removed)
- the size and location of any stormwater treatment, for both on or off-site
- in-lieu developer contributions required to achieve stormwater solutions off-site
- studies that are required to answer any of the above.

Planning for off-site solutions must demonstrate *environmental equivalence* and consider spatial, temporal, sustainability, receiving waters level of aquatic ecosystems protection and consultation requirements, as follows:

- Environmental equivalence—demonstrate the achievement of equivalent or improved water quality outcomes to the relevant SPP stormwater management design objectives in Appendix 2, Table B, through either:
    - the best available science to provide the supporting technical calculations—see the *EHP Point Source Water Quality Offsets Policy 2017* below; or
    - achieving the deemed to comply requirements under the Living Waterways framework—see below.

  Note the environmental equivalence assessment should use the technical measures, including off-site calculations and offset ratios, in the EHP Point Source Water Quality Offsets Policy 2017 under the *Environmental Protection Act 1994*. (See Table 1 and the EHP website for further details.)

Location	**Off-site ratio**
Same river basin – upstream	1.5:1
Same river basin - downstream	To be determined as part of the Planning Scheme Policy, an attenuation factor may increase the 1.5:1 offsets ratio. This will depend on distance from point source and impact on the receiving environment.
Same river basin – different water type	
Adjacent river basin	

Table 1. Off-site ratios to determine environmental equivalence.

- Spatial location—Off-site solutions must be in the same catchment as the development site.
- Temporal—if possible, the implementation of off-site solutions should precede the completion of the post construction phase of development, or with the minimum possible delay.
- Sustainability—Off-site solutions should be designed for whole of life cycle, including design to withstand or bypass inundation from major flood events (1 in 100 yr ARI, 1% AEP), to remain durable and to continue to deliver the off-site reductions in sediment and nutrient loads required to achieve SPP compliance.
- Off-site solutions should not be considered for development sites impacting on receiving waterways that are identified as high ecological value under the *Environmental Protection (Water) Policy 2009*.
- Consultation—as required by a local government, the planning for off-site solutions should be in consultation with key stakeholders, including relevant council departments, development industry and the community.

Environmental equivalence **demonstrated via the Living Waterways framework**

The Living Waterways framework, developed by Healthy Land and Water Ltd, can inform local governments in considering the type of off-site solutions. The framework incorporates community liveability benefits and provides flexibility within a quantitative framework that, if met, is deemed to comply with the SPP stormwater management design objectives. It recognises and credits the multiple benefits associated with avoidance techniques (including minimising impervious surfaces) that are not usually accounted for in MUSIC modelling. For details, see www.hlw.org.au. A summary follows.

Well-designed urban green infrastructure provides multiple benefits of protecting and enhancing natural water systems, while also building liveable cities and towns and resilient water supplies. A known success factor for achieving these outcomes is a collaborative design approach, where planners, landscape architects, engineers and other disciplines contribute equally to the process.

Living Waterways is a framework and scoring system that incentivises collaboration and integrated planning and design of urban water systems. Designs are developed and assessed against simple and measurable targets that provide flexibility to consider innovative and synergistic solutions that not only respond to site-specific conditions but also broader community expectations. Getting the design right means that costs can be minimized at all stages of development. Living Waterways also provides assessment authorities with the opportunity to set different minimum standards for development projects that align with the diverse values of their communities.

Standards should be set at a level which finds an appropriate balance between achieving the desired stormwater quality outcomes off-site that are affordable to local governments and their communities, as well as the development industry by ensuring the off-site solutions do not require a financial contribution by a development greater than the cost would have been of providing an on-site solution.

Scoring using the Living Waterways framework

Designers input information and address all mandatory items, and points are tallied automatically across a range of desired outcomes within four themes. The four themes are Living Water, Living Places, Living Communities and Living Local Economies. Achieving 36 points is considered equivalent to complying with the SPP stormwater management design objectives (i.e. achieves environmental significance) because it

achieves a high proportion of the stormwater quality requirements, in addition to significant and quantifiable contributions to waterway health, place-making and community well-being as shown in Table 1.

A digital user interface will allow designers and project managers to easily input all of the necessary data and automatically calculate these scores to allow different projects to be compared based on the different benefits they will provide. The online tool is available at the above website, www.hlw.org.au

Element	**Minimum Points Required***	**What form does the Minimum Standard Take**	**Determined by**
Stormwater Quality	2 points	Achieve least 80% of the stormwater management design objectives	Local Government
Waterway Health	16 points	Required points for outcomes that contribute to waterway health	Local Government
Living Waterways	36 points	Overall score for the Living Waterways framework including contributions to place-making and community wellbeing	Local Government

Table 2. Minimum standards for key waterway health components of the Drop score

Note that higher standards may be required by a Local Government in considering the environmental equivalence with the SPP stormwater management design objectives. Standards however should be set at a level which finds an appropriate balance between required outcomes and affordability for local governments, developers and the community.

General

Planning should consider both the current and predicted future condition of the receiving waterways that are potentially impacted by stormwater run-off from the development site, post the construction phase. Local waterway hydrology, water quality (including sediments, nutrients, heavy metals, hydrocarbons and gross pollutants) and ecology should be assessed because uncontrolled stormwater release from a development site may have significant impacts on waterway health.

Photo courtesy Healthy Land & Water Ltd

5. Local Government Policies and Planning Scheme Policies

A number of local governments have adopted council policies or planning scheme policies to manage the implementation of off-site solutions within their local government area.

This implementation guidance may assist local governments that are developing off-site solutions to ensure that these are consistent with the planning framework.

Existing council policies and planning scheme policies that support a financial contribution being made in-lieu of addressing stormwater on-site should be reviewed against this implementation guidance to determine if changes are needed to ensure they comply with the planning framework.

Any ability for off-site solutions to be adopted by a local government must be first given effect through the planning scheme. The relevant local government planning scheme should include code provisions that allow development to achieve post construction SPP stormwater management design objectives off-site, subject to conditions, such as development being located in an area that council supports off-site solutions. The planning scheme provisions should link to a Planning Scheme Policy (PSP) as the document containing the statutory policy elements to achieve the code in order for the PSP to be considered in assessment.

Planning Scheme Policy elements should identify design standards to achieve the SPP requirements (see part 3), and consider the inclusion of the following matters:

- the planning matters stated in section 4 above;
- criteria stating when off-site solutions will be considered, consistent with the management hierarchy stated in section 4;
- a metric (in-lieu financial calculator and contribution amounts) that defines the basis of developer contributions to reflect the transfer of responsibility from developer to a local government, for the performance of the off-site solution; based on costing off-site implementation, through in-lieu fees that reflect:
    - cost recovery to achieve outcomes consistent with the on-site solution it replace.
- the supporting technical information requirements
- governance matters—that consider:
    - a transparent mechanism for disclosing off-site investment and that the ongoing performance of the off-site solution is readily demonstrable The use of in-lieu fees from off-site solutions should be reported publically on an annual basis;
    - in-lieu fees should only be used for purpose stated at section 2, including to address residual SPP on-site requirements identified in section 3—if this responsibility transfers from a developer to a local government;
    - in-lieu fees should not be allocated to general revenue and should not be applied where the forecast supply of off-site solutions exceeds that available within the local government area; and
    - monitoring, evaluation and annual reporting to Council and the community, see section 7.

The off-site solution proposal should preferably be supported by an implementation plan which addresses all matters required for successful application, including scheduling and timing for constructing off-site solution relative to receiving in-lieu fees, monitoring and evaluation, and management of constructed assets.

6. Developer adoption of off-site solutions

As approved by a local government, developer adoption of off-site solution should be in accordance with this guidance document and in accordance with a local government planning scheme policy.

7. Evaluation, monitoring and reporting

Implemented off-site solutions should be monitored and evaluated to demonstrate the on-going achievement of *environmental equivalence*.

Annual reporting to Council and the community could consider summarising:

- location, size, type of development and–in-lieu fees collected to implement off-site solutions;
- location and type of off-site solutions delivered;
- assessments to determine if the scheme has met Council's strategic intent; and
- any additional benefits achieved as part of the implementation of off-site solutions.

Results of monitoring will inform evaluation and future management.

8. Case studies

Port of Brisbane Pty Ltd

The Port of Brisbane Pty Ltd is undertaking a pilot project to offset impacts to stormwater from low impact development activities on the Port site. The project involves remediating degraded creek banks in the catchments upstream of the Brisbane River, to reduce sediments and nutrients entering Laidley Creek and making their way down to the Port and Moreton Bay.

The first stage of the pilot project was completed in June 2016 and involved:

- stabilising a 750 metre section of badly eroded creek bank at Laidley Creek (100km upstream);
- installing two cross stream bed erosion control structures including an additional 200m of bank stabilisation; and
- re-planting more than 4,000 native trees and grasses.

The pilot project is preventing 4 800 tonnes per year of sediment (250 truckloads of dirt) entering Laidley Creek. Over time and as the vegetation matures the bank's resilience to erosion will also continue to increase. The project has resulted in other benefits including reduced soil erosion, improved flora and fauna habitats, reducing weeds and providing flood mitigation for adjacent horticultural lands. The results of this pilot will be used to inform and improve off-site stormwater solutions.

Figure 1. Top: site before works; Bottom: bank contouring;

Figure 2:

Top: Mulgowie Off-site Stormwater Treatment Pilot on Laidley Creek clearly showing the result of earthworks to rehabilitate

Bottom: The site immediately prior to the March 2017 flood showing high vegetation cover on rehabilitated bank. The work demonstrated a high degree of resilience to the Ex-Tropical Cyclone Debbie.

Mackay Regional Council

Mackay Regional Council (MRC) endorsed a 'Voluntary Mechanism for Stormwater Quality Management' policy in August 2014. Key drivers for the policy were poor design, construction, establishment and maintenance of on-site WSUD treatment devices, and changes in State policy regarding mandatory rainwater tanks.

The policy gives developers the option to make a payment to MRC in lieu of providing on-site stormwater quality treatment. Payments made to MRC fund the delivery of regional stormwater quality and waterway improvement projects including rehabilitating waterways, constructing regional wetlands and water quality monitoring.

The three scenarios available to development range from off-site stormwater treatment not being an option – due to high social or ecosystem values of the receiving waterways – to all stormwater being able to be treated off-site. Industrial and commercial developments must still treat litter and coarse sediment on-site. Waterway condition mapping undertaken by MRC identifies where off-site options can be considered.

MRC has identified five regional pilot projects which developer stormwater contributions will fund and are in the process of developing these projects, including one at Little McCready's Creek.

Little McCreadys Creek

Little McCreadys Creek at Rural View has been chosen as a site suitable for developing and showcasing best practice methods for improving stormwater quality, rehabilitating waterways, enhancing aquatic habitat, improving ecological corridors and improving visual amenity and community benefit. Little McCreadys Creek and the adjoining open space has been substantially altered, but has retained many environmental values including native fauna, fish, frogs and native vegetation.

A Catchment Management Plan has been developed for McCreadys Creek which identifies priorities for improving water quality through stormwater management measures and an ongoing process of maintaining and improving riparian vegetation. Design planning for the creek identifies stormwater and water quality improvement treatments such as rock pools and bed and bank controls, fish passage ways, benched wetlands and revegetation. Contributions from MRC's voluntary stormwater program go towards funding this project.

Figure 1. Site location (*above*) and finished works (*right*).

Ipswich City Council

Ipswich City Council (ICC) has developed an Implementation guideline that guides development on addressing stormwater management requirements of the planning scheme. They provide a standard approach for development implementing the relevant stormwater management aspects of the Ipswich Planning Scheme. The guide includes an option for voluntary offset payments in lieu of providing on-site stormwater treatment for nutrients. On-site stormwater treatment is still required for all other pollutants in stormwater as well as hydrological requirements.

A map identifies areas which are eligible and potentially eligible for applying off-sets

Disclaimer

The above examples demonstrate the outcomes that can be achieved through off-site solutions. The examples do not represent model approaches to embedding off-site solutions into a planning scheme as expressed by this implementation guidance.

9. Definitions

Environmental values means the environmental values for a water stated under Schedule 1 of the *Environmental Protection Policy (Water) 2009.*

Queensland waters means the waters that are within the limits of the State, including coastal/marine waters to 3 nautical miles from the coastline.

SPP Stormwater management design objectives Means the post construction phase stormwater management design objectives, for a climatic region, as stated in the *State Planning Policy State Interest Water Quality 2017* Appendix 2.

Water Quality Objectives means the water quality objectives for a water stated under Schedule 1 of the *Environmental Protection Policy (Water) 2009.*