

11<sup>th</sup> May 2018

Mr James Fewings  
Department of Environment and Science  
QLD Government  
Email: [james.fewings@des.qld.gov.au](mailto:james.fewings@des.qld.gov.au)

Attn: Mr James Fewings / Ms Paulina Kaniewska

Dear Jim & Paulina,

**RE: Stormwater Queensland Submission on Point Source Water Quality Offset Policy & Offsite Urban Stormwater Management (Urban Stormwater Offsets) Policy**

Stormwater Queensland commends the Department of Environment and Science (DES) on the preparation of the *Point Source Water Quality Policy* (the Point Source Policy) and the *Off-site Urban Stormwater Management Policy* (the Stormwater Offset Policy). Stormwater Queensland is of the firm view that if offset solutions are to be enabled under the *State Planning Policy (2017)*, a detailed guideline for effective implementation is critically important to the industry.

Stormwater Queensland (SQ) appreciates the time invested by DES Officers to attend the recent consultation workshop held at the Brisbane City Council Library on 12<sup>th</sup> April, 2018. The opportunity for our members to engage with the Department on these Policies prior to their release was invaluable. It is appreciated that Healthy Land & Water is developing a Guideline to assist in the implementation of Offset solutions for the Point Source Policy, and that this document was not available for review or comment at this time. It is our view that a similar Guideline for Stormwater Offsets is required.

Our members have provided the following comments and concerns. These have been collated as a risk-based system including:

- **Green 'low-risk' issues** – these include aspects of the guideline which we strongly support, or may require some minor clarification.
- **Amber 'medium-risk' issues** – these include aspects of the guideline which SQ would potentially support but which we believe require further explanation.
- **Red 'high-risk' issues** – these include:
  - aspects which are not currently addressed in the policies, which we believe should be included in order to provide a more appropriate level of guidance to the industry.
  - aspects of the policies which Stormwater Queensland does not support.

**Green 'low-risk' Issues**

SQ identifies the following aspects of the policies:

1. **Applicable Offset solutions & case studies:** It is acknowledged that the intent of the Policies is to provide Best Practice, broad boundaries within which Licence-holders and Councils may operate. It is understood that the Guideline is expected to provide more details and case studies of successful Offset solutions to guide implementation. We look forward to the release of the Guideline.
2. **High ecological value waterways:** It is understood that the previous wording discouraging impacts in areas of High Ecological Value (HEV) has been removed from the current Policies because the DES was not aware of any licences that were in HEV areas.
  - a. It is our view that the Policy should be both retroactive and proactive, anticipating a case in the future where it may be necessary to provide guidance for development in HEV areas. SQ considers that the Policy should clearly state that Offsets are not acceptable in order to protect HEV waterways.

### Amber “Medium-risk” Issues:

Stormwater Queensland believes further work is required to improve the Policies in the following areas;

3. **On-site delivery:** SQ supports the intent that Offset solutions are only appropriate where an on-site solution cannot be feasibly delivered on site. It is acknowledged that for many EA licence-holders, onsite process improvements have a significant cost to benefit ratio (in terms of nitrogen load reduction, for example) and that the intent is to avoid or minimise impacts at the point of concern. The following concerns are raised about the terminology used:
  - a. ‘Feasibility’ can be variously interpreted, for example, that on-site solutions are not feasible because a proponent has not designed adequate areas in the proposed layout, or the solutions are, in their view, too expensive. SQ recommends that further clarification is required including various examples where developments may or may not be considered to ‘feasibly’ deliver on-site solutions.
  - b. As we understand the guideline, a stormwater offset would be considered justified based on either superior outcomes or feasibility of on-site delivery. Assuming that both aspects remain in the guideline, we would recommend that the wording be amended so that off-site solutions shall only be considered where they are demonstrated to be a superior outcome/environmentally equivalent and where they cannot be feasibly delivered on-site.
  - c. Limiting Stormwater Offset solutions to sites ‘where it cannot be feasibly delivered on-site’ implies that most greenfield developments would not qualify. While Stormwater Queensland supports this interpretation, it is not explicit and could therefore be interpreted otherwise or amended in future iterations of the guideline. As such, we believe that there is value in explicitly limiting Stormwater Offsets in greenfield areas including within the Urban Footprint defined by the *SEQ Regional Plan* as per item 6 of the Stormwater Queensland Offsets position statement.
  - d. SQ believes there is also a strong case for limiting offsets above a certain development area threshold. There are numerous associated opportunities lost when stormwater offsets are applied to large scale development, yet there appears to be no justification for applying offsets where adequate land is available to manage stormwater on-site. This threshold can be debated but we suggest a useful starting point in the first version of the guideline would be 20 allotments or 12,500m<sup>2</sup> as indicated by the *Deemed to Comply Solutions (Water by Design, 2010)*. It is suggested that this threshold may also be linked to the “Deemed to Comply” requirements of the State Planning Policy and relevant Council planning schemes.
  - e. Stormwater offsets limit opportunities to minimise pollution at the point of concern, thereby potentially worsening water quality at that location, which SQ considers is contrary to the SPP State Interest. Any incentive to reduce the stormwater pollutants through avoidance (e.g. low impact design) and on-site mitigation should be encouraged and prioritised over off-site solutions.

4. **Minimum modelling standards/benefit prediction:** The practice of using relatively simple catchment models (e.g. MUSIC and Source) to forecast complex Point Source & Stormwater Offsets extends beyond the capacity and intended use of such models.
- a. In particular, these limitations are extended even further when proportionally small (sub-catchment) Offset solutions are proposed in the upper reaches of a relatively large (river basin) catchment to offset impacts at downstream reaches. This approach ignores the localised impacts that may be more significant (eg. eutrophication of already stressed waterways, sediment smothering sea grass).
  - b. Processes within creek and river systems are dynamic and require foundational research to verify the complex processes, background concentrations. Without a more refined method of predicting or replicating these complex processes/performance, SQ considers the Policies could potentially ignore considerable risks. SQ considers that a comparatively simple mass balance combined with an Offset Ratio & Adaptation factor is provides inadequate scientific rigour to support either a Point Source or Stormwater Offset. It is our view that greater minimum modelling requirements (eg. ecosystem process modelling) need to be detailed in the Guideline.
5. **Other Planning, water quantity and ecosystem management objectives:** The Stormwater Offsets policy specifically notes that, *‘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.’* We understand from the workshop also, that the Policies are intended to support, not remove or replace, all other requirements for Open Space, Landscaping, Planning, Amenity required by other legislation, policies and development assessment processes. Also, it is our understanding that the intent of the Policies is not to permit “double-dipping”, that is, using requirements under other approvals or licenses to also account for Offsets. Stormwater Queensland supports this position especially for the Stormwater Offsets Policy.
- a. In order to achieve these objectives, it is our understanding that measures such as detention basins, rainwater tanks, open space areas, overland flowpaths and pedestrian access (amongst others) may still need to be implemented onsite. We recommend that this is clearly articulated in any Guidelines to avoid confusion for developers and Councils that may interpret Offset solutions as a means to avoid onsite requirements and fast-track development. Stormwater Queensland is not presently aware of any case studies where this has actually been achieved but are aware of an increasing trend towards accepting stormwater offsets and relaxing other objectives.
  - b. Where stormwater offsets are accepted and requirements for flooding need to be met on-site, numerous opportunities could be missed, including:
    - i. Opportunities for integration within a total water cycle framework. As an example, detention basins may not incorporate useful ecosystem enhancements such as wetlands.
    - ii. Opportunities for integration of land and water planning within a water sensitive urban design (WSUD) framework. The removal of this opportunity could result in a range of other lost opportunities to local communities including, for example, fragmentation of communities; decreased property values; lowered amenity; warming microclimate; loss of downstream ecological values; and increased downstream erosion.
    - iii. Opportunities for managing hydrologic impacts. SQ acknowledges the historically fragmented approach to hydrologic controls under Planning legislation and recognises there are benefits to a catchment-wide framework to guide siting & sizing of off-site detention basins, for example. However, removing the ability to store and infiltrate volumes of water within the same catchment via infiltration, vegetated swales, bioretention

basins, detention tanks or rainwater tanks, exposes waterways to changes in stream power and flow frequency.

- iv. Exploration of further integration and innovation of floodplain management and emergency management. This in turn increases demand on floodplain and emergency management resources in flooding and heat wave scenarios that may not have existed previously.
- v. Opportunities for progressing our urban areas towards Water Sensitive Cities.

SQ considers that these lost opportunities become pronounced as development intensity increases. We recommend that the Guideline list these as criteria so that local governments, developers and the community fully appreciate the risks and are more willing to accept the thresholds suggested above.

6. **Maintenance burden:** The Stormwater Offsets Policy notes that, *'implementing off-site solutions can have benefits such as: reducing the maintenance burden of large numbers of small-scale stormwater treatment facilities managed by local government or private landowners.'* Stormwater Queensland proposes that this statement summarises an ongoing debate within industry that centralised assets are more efficient to operate and maintain than de-centralised assets. As was demonstrated by Toowoomba Regional Council with rainwater tanks, this premise is not always accurate. It is inappropriate for proponents of Offsets to use maintenance costs to justify off-site solutions without understanding the associated risks. The maintenance risks we believe should be presented in the Guideline include:

- a. Councils would inherit a greater number, or larger area, of assets which would otherwise be in private ownership. This is particularly applicable to small-scale infill developments greater than the SPP 'deemed to comply' threshold of 2,500m<sup>2</sup> including for example, medium-density townhouse developments and community facilities such as schools. Currently systems in private ownership are conditioned to maintain their own assets with a number of councils requiring long term maintenance contracts thus removing this financial burden from the relevant council.
- b. A larger Council workforce will be required to maintain the greater number of assets noted in the above point. This will also require greater investment in maintenance equipment and capacity building for staff.
- c. Maintenance of large regional systems may be greater than a group of smaller distributed systems as the larger regional systems require larger equipment and are exposed to greater risks e.g. greater stormwater flow volumes, higher flow velocities, and increased frequency of flooding. Information in this area has historically been difficult to extract and is fragmented from Council to Council.

7. **Case studies:** Although the disclaimer about the case-studies is acknowledged, Stormwater Queensland recommends the revision of the terminology used for the case studies. For example:

- a. The Port of Brisbane case study claims that, *'The pilot project is preventing 4800 tonnes per year of sediment (250 truckloads of dirt) entering Laidley Creek.'* It is understood that this is an estimated load reduction rather than a demonstrated/measured load reduction. We understand that this will be explained in further detail in the Guideline, that was not available for review at the time of this response. SQ recommends that further detail for any case studies be included in the Guideline.
- b. The Mackay Regional Council case study suggests that financial (Offset) contributions are used to fund a range of 'waterway improvement projects' including water quality monitoring. SQ recognises that, *to demonstrate the functionality of any Offset solution*, monitoring will be necessary. Whilst it is considered that water quality monitoring does not *improve* environmental outcomes, it is valuable to provide transparency and accountability for any investment in an Offset solution. SQ would, however, disagree with promoting monitoring in the Guideline or Policy as an Offset solution, instead as a method to demonstrate the function and operation of the Offset measure.

c. Ipswich City Council case study:

- i. It is unclear from the limited information provided what the Stormwater Offset Policy is indicating are the outcomes. SQ recommends that the outcomes that have been delivered/achieved/measured be detailed.
- ii. This case study mentions the *ICC Implementation Guideline* but does not mention the extensive background planning undertaken by ICC in the preparation of the *ICC Stormwater Quality Offsets Implementation Strategy*. SQ is concerned that this could give a false impression that a simple planning scheme policy is adequate to meet the requirements of the Stormwater Offset policy when a substantially greater level of planning was undertaken. It is recommended that the case study acknowledge the strategy and detailed background planning undertaken.

Although the guideline mentions that ICC's PSP requires compliance with other objectives (e.g. hydrological requirements) this typically needs to be undertaken by onsite measures such as bioretention systems, swales, rainwater tanks, proprietary filters and gross pollutant traps. It is questionable whether this has actually been achieved in reality and as such, whether this is realistic expectation.

8. **Nomenclature & Terminology:** We note two points for your consideration with regard to nomenclature:

- a. The reason for distinguishing between Point Source and Diffuse (Stormwater) Offsets, is understood to be due to the Point Sources being licensed as Environmentally Relevant Activities (ERAs) whereas the Stormwater Offsets are not. SQ considers that both could be addressed in separate sections of a single Policy, to unify assessment and verification processes.
- b. It is also acknowledged that stormwater quality offsets are not identified in the *Environmental Offsets Act (2014)*. However, it is unclear whether changing the terminology in these Policies and Guidelines is actually necessary and whether this is a correct legal interpretation, or opinion. Alternative terminology such as 'off-site solutions' is considered confusing and SQ recommends the use of "stormwater quality offsets" unless legal advice to the contrary is provided.
- c. It is understood that the Point Source Offsets Policy presently only applies to existing Environmental Authority (EA) holders. SQ foresees the likelihood that there will be new EA applications that may need to apply the Policy as the State grows.

**Red "High-risk" Issues:**

The following matters Stormwater Queensland believes are of significant concern;

9. **Legislation/Head of Power, Oversight, Governance and Enforcement:**

- a. SQ considers that the Policies presently do not clearly state the relevant legislation/head of power, and critical requirements that the Policies are seeking to support.
  - i. The Point Source Offset Policy appears to have a head of power associated with the EPAct 1994 through Environmentally Relevant Activities. It is not clear where the head of power is for the Stormwater Offset Policy.
- b. SQ understands that the Point Source Offset Policy will be assessed and administered by DES through the ERA licensing process. Following the consultation workshop on 12<sup>th</sup> April 2018, SQ also understands that DES has no intention of assessing or administering the Stormwater Offsets schemes implemented by local authorities. We acknowledge the Department's response that local authorities are bound by law, and recent examples of Offset policies have given DES comfort that the State does not need to intervene or regulate. SQ notes recent

examples of poor accountability within Councils investigated by the CCC and highlights that Stormwater Offsets are potentially significant sums that presently have no transparency surrounding their application.

- c. SQ understands that ERA licence criteria often require monitoring and reporting by the licensee to DES and that this incentivises maintenance and effective operation of the Point Source Offset measure. SQ has serious concerns that, without similar oversight and enforcement, Stormwater Offset solutions will not be maintained and operated effectively.
- d. SQ also understands that the Guideline for Point Source Offsets requires significant scientific details to demonstrate the benefit of the Offset, including LiDAR, Modelling, soil samples etc. However, there is a concern that similar rigour is not being applied to Stormwater Offsets solutions and SQ considers this should be included in the Policy.
- e. Section 7 of the Stormwater Offsets Policy indicates that Annual reporting *'could'* summarise in-lieu fees, location and types of Offset solutions delivered. SQ considers that, if the Policy is presenting Best Practice, the Policy should be requiring these details, and;
  - i. a transparent accounting of the overall financial position of the Scheme, distinct from Council's Annual Reporting,
  - ii. Proposed Offset projects, locations and budgets,
  - iii. A Profit & Loss Statement of any Offset projects delivered under the scheme, and an evaluation against the Project Budget,
  - iv. Results of Annual monitoring and maintenance programs to demonstrate the impacts mitigated by the Offset solution.

## 10. Recognition of recent research updates

- a. It is Stormwater Queensland's understanding that the Stormwater Offsets policies are being driven by a frustration that the current stormwater management targets are leading to expensive assets that are problematic to maintain. Recent research by Lucke et al (2018) raises some significant questions about current urban stormwater pollutant concentrations, and other research suggests bioretention systems perform quite differently to MUSIC simulations (see for example Peljo et al 2016, Lucke and Nichols 2015, Hatt et al 2009, Manganka et al 2015, Trowsdale and Simcock 2011). Given the current design objectives are based on a combination of potentially outdated assumptions about urban stormwater quality and bioretention performance, we suggest DES ensures that offsets are not adopted as a maladaptive response to the current set of design objectives. SQ considers that it may be worthwhile deferring the Stormwater Offsets policy until the current review of stormwater quality objectives (being undertaken by Healthy Land and Water) is complete.

## 11. Offset ratios & Adaptation Factors:

- a. The new Policy drafts permit Offsets in multiple locations; same river basins, different river basins, same NRM regions and different NRM regions, subject to an Offset ratio of 1.5 times the onsite solution, and an Adaptation factor to be determined. We understand that this Ratio was selected as a precautionary principle in accordance with the General Environmental Duty (GED) required by the Environment Protection Act, and acknowledgement that Ratios above 2 have proven uneconomical internationally.
  - i. Stormwater Queensland does not consider that there is adequate science to demonstrate impact mitigation by implementation of Offsets across different river basins or NRM regions. However, it is possible that there is information we are not aware of and would welcome additional information from DES where it is available.

- ii. It is acknowledged that the application of an Offset Ratio and Adaptation is an appropriate response to satisfy an applicant's GED. However, SQ has concerns that the selection of a Ratio <2 on the basis that it is uneconomical or under-utilised internationally, under-values the true environmental impact. It is our view that the Ratio and/or Adaptation factor should be calculated based on adequate science, specific to the development location.
- b. The Point Source Policy sits within the framework of Environmentally Relevant Activities (ERAs) assessed and licensed by DES. This facilitates the DES oversight and assessment of the proposed Ratio and Adaptation factor. SQ considers that information should be provided by DES on how the appropriate Ratio and/or Adaptation factor is assessed under the Stormwater Offset Policy.

**12. Dry weather impacts vs wet weather offset solution:** Following discussion at the workshop regarding the HLW Guideline in preparation, SQ has some concerns regarding the focus on wet weather offset solutions:

- a. Stormwater Queensland recognises the challenges with demonstrating the benefits of dry weather Offset solutions and the comparatively simpler process to demonstrate the benefits of wet weather solutions (eg. erosion control through streambank stabilisation). It is also acknowledged that the Point Source Policy does not allow offsetting dry weather discharge with a wet weather offset solution.
- b. It is unclear then, how Figure 1 Options B & C provide for the possibility of offsetting for both dry and wet weather discharges at the same ratio. It is recommended that this Figure be revised, if indeed the Policy will prohibit wet weather offset of dry weather discharges.
- c. Alternately, if the Policy is to permit wet weather offset solutions of dry weather impacts, SQ has concerns that any assessment of such proposals appropriately addresses the long term chronic impacts of the dry weather release against the acute, perhaps statistically infrequent, wet weather events.

**13. Timing:** SQ has serious concerns regarding the absence of discussion surrounding timing in the Stormwater Offsets Policy:

- a. It is acknowledged that the Point Source Offset Policy requires that the '*offset must be provided in advance or concurrently with impacts that are occurring so that the water quality offset provides the benefit at the time of additional point source discharge release*'. SQ notes that no such requirement has been observed in the Stormwater Offsets Policy.
- b. It is acknowledged that for a local authority to implement an Offset scheme project it may require contributions from multiple developers to build sufficient funds. However, in the interim, water quality impacts will continue to occur. If an onsite solution were constructed, it would be in place at the time of development. SQ has concerns that without guidance from the Stormwater Offsets Policy, local authorities could continue to collect contributions without implementing any offset solutions.
- c. Stormwater Queensland considers that the Stormwater Offset Policy should include a similar Timing Section to that of the Point Source Offset Policy providing best practice guidance that Schemes should implement Offset solutions:
  - i. Within 12 months of receiving developer offset contributions, where Council has a Project List and Budgets prepared;
  - ii. Within 24 months of receiving developer offset contributions, where Council is preparing a Project List and Budgets;

**14. Planning:**

- a. As per item 14 of the Stormwater Queensland position statement, 'offset charge pricing should be reflective of appropriate costs including land costs (regardless of current land availability), planning, design, construction,

establishment and administration (e.g. for planning and resourcing).’ There are also a range of other hidden costs becoming more apparent to LGA’s implementing offsets such as resourcing, maintenance, marketing, community events, promotion etc. As such, it is considered appropriate to require a net gain rather than financial equivalency.

- b. As per item 15 of the Stormwater Queensland position statement, costs also, *‘need to account for the maintenance, renewal and decommissioning costs in addition to the costs outlined in the above point.’*
- c. As per item 16 of the Stormwater Queensland position statement, *‘the total value of potential off-site solutions and the individual off-site solutions charge should be determined prior to collecting offset funds. The off-site solutions charge should include a contingency factor to account for inflation, risks, equivalency and uncertainties.’*
- d. Stormwater Queensland considers that unless the in-lieu fees include land costs, planning, design, construction, establishment, maintenance and decommissioning costs. Therefore, these costs should be accounted for otherwise Offset Policies will effectively encourage Offset contributions and discourage onsite solutions.

**15. Environmental Equivalence & Living Waterways:** Stormwater Queensland acknowledges the value of the Living Waterways document, however the application of it in the guideline is not supported for the following reasons:

- a. There are significant risks in embedding any external guideline or tool within state policy or guidance. For example, there are now significant issues with the inherent use of eWater’s MUSIC modelling software to demonstrate compliance with the water quality state interest. To reference another tool which performs a similar role risks similar issues for this guideline and for industry more broadly.
- b. Living Waterways was developed by Healthy Waterways which we understand maintains the intellectual property rights to the document (as the new entity, Healthy Land and Water). If our understanding is correct and if at any stage HLW changes operating arrangements (for example becomes privatised, or is dissolved in the future) the guideline could provide exclusive rights to a single company over a key compliance tool or enshrine a document that cannot later be modified. This could have implications for fair trading and Australian Consumer Law.
- c. Living Waterways was developed as a pathway for compliance with water quality objectives where full compliance was not feasible due to site constraints while improving the uptake/quality of water sensitive urban design (WSUD). In effect, it trades lower water quality for other intangible benefits (liveable cities, resilient water supplies) to achieve this compromise. As we understand the Stormwater Offset Policy, off-site solutions are intended to provide a pathway for compliance with water quality objectives where full compliance was not feasible onsite due to site constraints. To combine Living Waterways with off-site solutions is considered to be relocating and then discounting the environmental outcomes which is not environmental equivalent or providing a superior outcome. We interpret that the likely intent of including Living Waterways in the guideline was to ensure that multiple benefits would be achieved in the off-site solutions. We suggest that this can be achieved by mentioning the multi-benefit, desired outcomes in the guideline and requiring that they be reflected in local planning policies.
- d. We consider that there is no justification to apply the ‘drop rating system’, especially the discounting of water quality objectives to achieve multiple benefits when off-site solutions are applied. Achieving multiple benefits should be inherent in off-site solutions which would generally be larger regional treatment systems and not limited by site constraints to the same extent as small urban developments.
- e. The ‘drop rating system’ discounts water quality objectives. This is inconsistent with the requirement for providing environmental equivalence in an Offset solution.
- f. The discounting of water quality objectives is also inconsistent with the off-site ratios provided in section 4 of the guidelines. In reality, it is expected that due to the uncertainties associated with off-site solutions, temporal

equivalence and trading across river basins (spatial equivalence), treatment systems will actually need to be larger than the conventional systems and larger than the systems enabled through the Living Waterways 'drop rating system'.

- g. Despite a number of comprehensive attempts, Stormwater Queensland is not aware of any examples of the Living Waterways guidelines being successfully implemented to urban development in Queensland. As such, the successful application of the guideline appears to be unproven at this point in time.

We thank you for the opportunity to provide feedback on these policies.

Should you have any questions or would like to discuss this response further, please don't hesitate to contact me.

Kind regards,



**Dr Darren Drapper**

President, Stormwater Queensland, on behalf of the Stormwater Queensland Committee  
([darren@drapperconsultants.com](mailto:darren@drapperconsultants.com), Mob. 0431 299 875)

## **Appendix A: Stormwater Queensland Stormwater Quality Offsets Position Statement**

13 November 2017

Healthy Waters, Department of the Environment and Heritage Protection  
Email: [spphealthywaters@ehp.qld.gov.au](mailto:spphealthywaters@ehp.qld.gov.au)

Attn: Brad Dines

Dear Brad,

**RE: Stormwater Queensland Submission on Draft Implementation Guidance for Off-site Urban Stormwater Management 2017**

Stormwater Queensland commends the Department of the Environment and Heritage Protection (DEHP) on the preparation of the *Draft Implementation Guidance for Off-site Urban Stormwater Management – Alternative locally appropriate solutions, supports achieving the outcomes of the State Planning Policy State Interest Water Quality 2017* (the guideline). Stormwater Queensland believes that if stormwater off-site solutions are to be enabled by the *State Planning Policy (2017)*, a detailed guideline for effective implementation is critically important to the industry.

Stormwater Queensland submits that a number of key aspects of the guideline require further consideration as outlined in points 1-17 below. While these points focus on the guideline rather than on matters pertaining to the State Planning Policy (2017), there are also a number of concerns with regard to the State regulatory framework which we believe require attention:

- A. The SPP is a very high level document which provides the head of power for flexible, alternative solutions but no other requirements related to off-site solutions. Meanwhile, the guideline provides *advice* on how authorities could plan for off-site solutions but provides no regulatory certainty regarding mandatory aspects of such planning. While the need for some flexibility is acknowledged, there remains a regulatory gap between the policy and guideline which limits transparency or even knowledge by the State over how off-site solutions are implemented by proponents (e.g. local governments). This gap could also facilitate the potential misuse of in-lieu fees and poor implementation of off-site solutions.
- B. Authorities maintain absolute discretion as to whether the guideline is implemented. Stormwater Queensland is aware of local governments collecting financial contributions and not spending those contributions on off-site solutions in part, due to a lack of mandatory legislative/regulatory requirements and lack of third party oversight (e.g. State interest checks or independent expert). We are concerned that the current guideline and framework adds some legitimacy to such practice and will not deliver the desired environmental objectives including compliance with the Water Quality State Interest.
- C. The guideline defers local government planning to local government planning scheme policies (PSPs). It is understood that PSPs do not form part of local planning scheme drafting/amendment state interest checks thereby giving no oversight to the State over how off-site solutions are planned. Furthermore, this offers no certainty to the community that local government off-site solution schemes will actually achieve the SPP Water Quality State Interest.
- D. Further to the above item, the guideline altogether omits any mention of planning required by other proponents such as ports or water authorities (refer to item 13.b below).

Furthermore, we would like to highlight two points on the DEHP's current approach to engagement:

- E. There are varying levels of commonly recognised engagement including; information, consultation; involvement; collaboration; and empowerment. Stormwater Queensland is concerned that the DEHP has elected to take a very low level of engagement on such a complex issue and with such broad-reaching implications for the community. We feel that the level of engagement should be extended to encourage greater debate and involvement of the industry and broader community. Stormwater Queensland can assist the DEHP in organising events across the State and would welcome the opportunity to organise and co-sponsor such events.
- F. Further to the above point, Stormwater Queensland is concerned with the timeframe for engagement. The timeframe nominated by the DEHP has allowed Stormwater Queensland simply to request written comment from our members and draft this response. The process was rushed and has not allowed for more active and productive engagement with our members. We would like to see the timeframe extended to allow various industry groups to engage with their members and broader community regardless of whether or not DEHP intends to undertake such engagement.

Stormwater Queensland has published the *Stormwater Quality Offset Solutions Position Statement (2014)*, (the 'position statement'), which has been previously provided to the DEHP. Comments in this submission frequently refer back to our position statement which is provided in Appendix A for ease of reference.

The format of the submission below is presented as a risk-based system including:

- **Green 'low-risk' issues** – these include aspects of the guideline which we strongly support, or may require some minor clarification.
- **Amber 'medium-risk' issues** – these include aspects of the guideline which we would potentially support but which we believe require further work before they are embedded in the guideline.
- **Red 'high-risk' issues** – these include:
  - aspects which are not currently addressed in the guideline, which we believe should be included in order to provide a more appropriate level of guidance to the industry.
  - aspects of the guideline which Stormwater Queensland does not support at all.

### **Green 'low-risk' Issues**

Stormwater Queensland supports the following aspects of the guideline:

1. **Applicable off-site solutions:** The fundamental intent behind the requirement to demonstrate that an off-site solution is either a 'superior outcome' or 'cannot be feasibly delivered on site' in order to be considered for off-site solution. Some further comments on the practical application of these requirements is however provided below (refer to item 8 below).
2. **High ecological value waterways:** The statement that, '*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.*' The wording of this statement ('should not') could however, be interpreted to be an optional requirement and that off-site solutions may be acceptable in some waterways of high ecological value. Acknowledging that this is a guideline, all aspects of which are optional, we believe that the wording should be amended to 'shall not' in order to provide a clearer intent regarding the protection high ecological value waterways.
3. **Local head-of-power:** The requirements for off-site solutions having a head-of-power in local policy (e.g. through a local government planning scheme) before being accepted. Some further comments on appropriate state-interest checks related to this issue are provided below (refer to item C above).

4. **Prioritising delivery and the hierarchy approach:** The requirement for prioritising delivery of stormwater management solutions on-site including via the proposed hierarchy approach. We suggest that the onus be on a proponent of an off-site solution to demonstrate compliance with this approach.
5. **Policy documentation:** The matters which need to be included in policy documentation (noted at bottom half of page 6 of the guideline).
6. **Implementation Planning:** That '*off-site solutions should preferably be supported by an implementation plan.*' The wording of this statement ('should preferably') implies that this is an optional requirement. Again acknowledging that this is a guideline, all aspects of which are optional, we believe that the wording should be amended to '*off-site solutions are required to be supported by an implementation plan.*' Such wording is expected to provide greater certainty regarding the state's intent on planning requirements.

#### **Amber "Medium-risk" Issues:**

Stormwater Queensland would potentially support the following aspects of the guideline but we believe further work is required to improve the provisions.

#### **7. Superior outcomes/environmental equivalence:**

- a. The requirement to demonstrate that an off-site solution is a '*superior outcome*' or has achieved '*environmental equivalence*' requires further clarification to explain when such objectives have been achieved and to provide examples of how they can/cannot be achieved. It is noted that the only example provided in the guideline is that a superior outcome provides '*greater environmental outcomes*'. This is a broad, generic statement that could be variously interpreted.
- b. In order to determine whether an outcome is superior/equivalent or not, it would first be necessary for a local government to have assessed all potential off-site solutions and assessed their potential environmental performance. This is considered a reasonable and practical exercise, however to then directly translate the performance of a particular off-site solution to a proposed off-site project is unlikely to be practical, and may be scientifically tenuous.
- c. Further to the above point, aiming for a superior outcome may be flawed in its practical application in that most, if not all off-site solutions would likely be larger regional systems which offset a number of smaller site-based treatments. As such, these regional systems can readily be demonstrated to provide greater environmental outcomes and most, if not all, off-site solutions could be considered to provide superior outcomes.
- d. Proponents of offsets schemes should be required to prove that proposed treatments are a '*superior outcome*' or have achieved '*environmental equivalence*'. For example, riparian revegetation needs to be shown that it provides the same environmental benefit as a biofiltration system or approved proprietary system does. This would require a third party certification by an independent expert which should be made publically available.

As noted in Point 1 above, we support the intent of demonstrating a superior outcome and environmental equivalence but due to the issues noted above, we do not believe that this statement in its current format is workable. We believe that it would be necessary to both clarify when a superior outcome has been achieved and to explain how this is to be practically demonstrated.

8. **On-site delivery:** As noted in Point 1 above, we support the intent that off-site solutions are only appropriate where an on-site solution '*cannot be feasibly delivered on site*'. There are however, a number of key points we would like to make with respect to this requirement:

- a. The word 'feasibly' can be variously interpreted including for example, that on-site solutions are not feasible because a proponent has not allocated adequate areas on site, or the solutions are, in their view, too expensive to be feasible. We recommend that further clarification is required including various examples where developments may or may not be considered to 'feasibly' deliver on-site solutions.
  - b. As we understand the guideline, an off-site solution would be considered justified based on either superior outcomes or feasibility of on-site delivery. Assuming that both aspects remain in the guideline, we would recommend that the wording be amended so that off-site solutions shall only be considered where they are demonstrated to be a superior outcome/environmentally equivalent and where they cannot be feasibly delivered on-site.
  - c. Limiting off-site solutions to sites 'where it cannot be feasibly delivered on-site' implies that most greenfield developments would not qualify. While Stormwater Queensland supports this interpretation, it is not explicit and could therefore be interpreted otherwise or amended in future iterations of the guideline. As such, we believe that there is value in explicitly limiting off-site solutions in greenfield areas including within the Urban Footprint defined by the *SEQ Regional Plan* as per item 6 of the Stormwater Queensland position statement.
  - d. We believe there is also a strong case for also limiting offsets above a certain threshold. There are numerous lost opportunities when off-site solutions are applied to large scale development (see for example item 10.b below), yet there appears to be no justification for applying offsets where adequate land is available to manage stormwater on-site. This threshold can be debated but we suggest a useful starting point in the first version of the guideline would be 20 allotments or 12,500m<sup>2</sup>. This is also the threshold for deemed to comply solutions recognised in the *Deemed to Comply Solutions* (Water by Design 2010) beyond which, applications should readily have adequate land to justify on-site treatment and be cost-effective.
  - e. Off-site solutions limit opportunities to minimise pollution in the first place thereby providing a worsening of water quality which is contrary to the SPP State Interest. Any incentive to reduce the stormwater pollutants through avoidance (e.g. low impact design) and on-site mitigation should be encouraged and prioritised over off-site solutions.
9. **Minimum modelling standards/benefit prediction:** The practice of using simple catchment models (e.g. MUSIC and Source) to model complex off-site solutions extends beyond the capacity and intended use of such models. In particular, these limitations are extended even further when proportionally small (sub-catchment) off-site solutions are proposed in the upper reaches of a relatively large (river basin) catchment to offset works at the downstream outlet. This approach ignores the localised impacts that may be more significant in estuarine areas (e.g. sediment smothering sea grass).
- Processes within creek and river systems are dynamic and extremely complicated and without foundational research to verify the complex processes and a more refined method of modelling to replicate these complex processes/performance e.g. hydrodynamic models with module add-ons for pollutant transportation, presents unacceptable risks. Such risks include failing to appropriately model the efficacy of the off-site solution and failing to meet the SPP Water Quality State Interest. Greater minimum modelling requirements need to be detailed in this guideline. These should be worded to suggest that any lesser methods would not be applicable.
10. **Other stormwater water management objectives:** The guideline specifically notes that, '*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.*' The intent of this statement is supported and consistent with item 7 of the Stormwater Queensland position statement. Notwithstanding, there are numerous issues which require further consideration and direction in the guideline related to the practical application of this requirement including:

- a. In order to achieve this aim, it is our understanding that measures such as bioretention systems, swales, rainwater tanks, proprietary filters and gross pollutant traps may need to be implemented onsite. This is contrary to the expectation of developers who see off-site solutions as a means to avoid site-based treatment and contrary to the expectations of some local governments who wish to fast-track development. As such, Stormwater Queensland is not actually aware of any case studies where this has actually been achieved but are aware of an increasing trend towards accepting off-site solutions and not enforcing other objectives. The guideline needs to be clear on the expectations and likely methods for compliance (as noted above) so that all stakeholders are aware of likely investment costs and requirements.
- b. Where off-site solutions are accepted for stormwater quality and requirements for flooding for example need to be met on-site, this will minimise numerous opportunities including:
  - Opportunities for integration within a total water cycle framework. As an example, detention basins may not be integrated into useful spaces such as wetlands.
  - Opportunities for integration of land and water planning within a water sensitive urban design (WSUD) framework. The removal of this opportunity is expected to result in range of other lost opportunities to local communities including for example lost opportunities for: integration of liveability in communities; increased property values; improved amenity; microclimate management; protection of downstream ecological values; and reduced downstream erosion (hydrologic control) etc.
  - Opportunities for managing hydrologic impacts. WSUD outcomes on-site are really the only way to manage hydrology change from development impact. Taking away the ability to store and infiltrate volumes of water within development sites through vegetated swales, bioretention basins, rainwater tanks, disconnection etc. exposes downstream streams to changes in stream power and frequency of that stream power impact.
  - Opportunities to explore further integration and innovation of floodplain management and emergency management. This in turn increases demand on floodplain and emergency management resources in flooding and heat wave natural disasters.
  - Opportunities for progressing our urban areas towards Water Sensitive Cities.

These lost opportunities become more pronounced the larger the development application. Both the lost opportunities and increased likelihood as the scale of development increases really need to be highlighted in this guideline so that local governments, developers and community fully appreciate the risks of applying off-site solutions and are more willing to accept the thresholds noted in item 8.d above.

**11. Maintenance burden:** The guideline specifically notes that, *'implementing off-site solutions can have benefits such as: reducing the maintenance burden of large numbers of small-scale stormwater treatment facilities managed by local government or private landowners.'* Although the word 'can' is acknowledged, this statement still provides a very one-sided interpretation of the effect which off-site solutions may have on maintenance and a more balanced interpretation should be presented. This is especially the case as proponents often use maintenance as a means to justify off-site solutions without understanding the potential risks. The maintenance risks we believe should be presented in the guideline include the following:

- a. Councils would inherit a greater number of assets which would otherwise be in private ownership. This is particularly applicable to small-scale infill developments greater than the SPP threshold of 2,500m<sup>2</sup> including for example, multi-unit residential developments and community facilities such as schools. These are likely to make up a significant number of developments where off-site solutions are applied.
- b. A larger Council workforce will be required to maintain the greater number of assets noted in the above point. This will also require greater investment in maintenance equipment and capacity building for staff.

- c. Maintenance of large regional systems may actually be greater than a group of smaller distributed systems as the larger regional systems are exposed to greater risks e.g. greater stormwater flow volumes, more intense flow velocities, and increased frequency of flooding.

**12. Case studies:** Although the disclaimer about the case-studies is acknowledged, Stormwater Queensland recommends the revision of the terminology used for the case studies. For example:

- a. The Port of Brisbane case study claims that, '*The pilot project is preventing 4800 tonnes per year of sediment (250 truckloads of dirt) entering Laidley Creek.*' It is understood that this is an estimated load reduction rather than a demonstrated/measured load reduction. We recommend that the clause be qualified instead of presented as fact.
- b. The Mackay Regional Council case study suggests that financial contributions are used to fund a range of 'waterway improvement projects' including water quality monitoring. Water quality monitoring does not improve environmental outcomes so we do not consider it environmentally equivalent or appropriate to be funded with off-site solution financial contributions. We discourage promoting it in the guideline as an off-site solution, however, fully support water quality monitoring programs as a method to inform off-site solution schemes.
- c. Ipswich City Council case study:
  - We are unclear as to the value of the Ipswich City Council case study from the limited information provided. What outcomes have been delivered/achieved/measured?
  - This case study mentions the *ICC Implementation Guideline* but makes no mention of the extensive planning undertaken by ICC in the preparation of the *ICC Stormwater Quality Offsets Implementation Strategy*. This gives the false impression that a simple planning scheme policy is adequate to meet the requirements of the policy when in reality, a substantially greater level of planning should be required. The case study really needs to acknowledge the strategy or at least note that more detailed planning would need to be undertaken in addition to such a PSP.

Although the guideline mentions that ICC's PSP requires compliance with other objectives (e.g. hydrological requirements) this typically needs to be undertaken by onsite measures such as bioretention systems, swales, rainwater tanks, proprietary filters and gross pollutant traps. It is questionable whether this has actually been achieved in reality and as such, whether this is realistic expectation (see Point 10 above for further comment on this issue).

**13. Nomenclature:** We note two points for your consideration with regard to nomenclature:

- a. The reason for the calling off-site solutions, 'off-site solution' is understood to be due to the fact that there is no mention of stormwater quality offsets in the *Environmental Offsets Act (2014)*. However, it is unclear whether changing the terminology in this guideline is actually necessary and whether this is a correct legal interpretation or simply opinion. Alternative terminology such as 'off-site solutions' is considered confusing and we believe stormwater quality offsets should be called stormwater quality offsets unless legally justified otherwise. Our submission uses the term 'off-site solutions' simply for consistency with the current guideline.
- b. The policy currently refers to local governments as the proponents of off-site solution schemes and also calls up their planning schemes and associated planning documents. It is noted however, that other organisations such as ports and other authorities may also offer off-site solutions. We recommend that the DEHP consider using terms which encompass other organisations which may be proponents of off-site solutions schemes and their planning documents (i.e. not just planning schemes) and if necessary, define such terms in a glossary. This would ensure the guideline is more encompassing of the expected target audience and more relevant organisations other than local governments.

## Red “High-risk” Issues:

The following are matters which Stormwater Queensland believes are either aspects which are not currently addressed in the guideline but which we believe should be in the guideline in order to provide a more appropriate level of guidance to the industry, or which Stormwater Queensland does not support at all.

**14.Planning:** There are two points raised for your consideration with regard to planning for off-site solutions:

- a. We believe this guideline should be worded to include direction to proponents on what should be included in an off-site solution scheme. The *Ipswich City Council Stormwater Quality Offsets Strategy* for example, provides a good example of what should be included in such a plan. While the guideline includes some of the elements addressed in the ICC strategy, the table of contents from the ICC strategy could be translated to the guideline in order to provide a more comprehensive template for other schemes.
- b. As per item 8 of the Stormwater Queensland position statement, ‘*Off-site solutions schemes should be underpinned by appropriate total water cycle and catchment planning and local authorities should undertake such planning in order to achieve the optimal outcomes.*’ There is no mention of either total water cycle or catchment planning and this is considered a major oversight in the guideline as it is necessary for the appropriate planning of off-site solutions especially where any off-site solutions in adjacent river basins are being considered.

**15.Off-site ratios:** There are a number of points raised for your consideration with regard to off-site ratios:

- a. Table 1 of the guideline suggests that off-site ratio can be applied in adjacent river basins. In accordance with item 10 of the Stormwater Queensland position statement, this is not supported unless backed up by appropriate total water cycle and catchment planning.
- b. We note the statement that, ‘*Off-site solutions must be in the same catchment as the development site.*’ While we agree with this statement and note that it is consistent with item 10 of the Stormwater Queensland position statement, it would appear to provide advice contrary to Table 1 of the guideline which suggests that off-site ratio can be applied in adjacent river basins.
- c. The current guideline links off-site ratios with the *EHP Point Source Water Quality Off-site solutions Policy 2017*. Stormwater Queensland questions this approach since changes to the point source policy would have direct implications to the urban off-site solutions guideline. Similarly, any changes required to this guideline in the future would necessitate a change to the point source policy complicating the policy amendment process.
- d. The offset ratios outlined in the policy are considered very low. Given the lack of science which supports point source off-site solutions including issues related to environmental, spatial and temporal equivalence, it could reasonably be expected that the ratios would be set much higher. The science behind the suggested ratios is not actually explained anywhere and Stormwater Queensland believes remains to be verified.

**16.Collection of financial contributions:** The guidelines states that, ‘*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.*’ There are a number of points raised for your consideration with regard to this statement:

- a. The statement would appear to be inconsistent with the off-site ratios provided in section 4 of the policy. As noted above, it is expected that due to the uncertainties associated with off-site solutions, temporal equivalence and trading across river basins (spatial equivalence), treatment systems will actually need to be larger than conventional systems and therefore the financial contribution will need to reflect this in accordance with the off-site ratios.

- b. As per item 14 of the Stormwater Queensland position statement, 'offset charge pricing should be reflective of appropriate costs including land costs (regardless of current land availability), planning, design, construction, establishment and administration (e.g. for planning and resourcing).' There are also a range of other hidden costs becoming more apparent to LGA's implementing offsets such as resourcing, maintenance, marketing, community events, promotion etc. As such, it is considered appropriate to require a net gain rather than financial equivalency.
- c. As per item 15 of the Stormwater Queensland position statement, costs also, '*need to account for the maintenance, renewal and decommissioning costs in addition to the costs outlined in the above point.*'
- d. As per item 16 of the Stormwater Queensland position statement, '*the total value of potential off-site solutions and the individual off-site solutions charge should be determined prior to collecting offset funds. The off-site solutions charge should include a contingency factor to account for inflation, risks, equivalency and uncertainties.*'
- e. Stormwater Queensland believes that unless the in-lieu fees include land costs, planning, design, construction, establishment, maintenance and decommissioning costs and thereby exceed the cost of implementing onsite solutions, they will effectively act as an incentive for development to prove onsite solutions are infeasible.

**17. Living Waterways:** Stormwater Queensland acknowledges the value of the Living Waterways document, we do not support the application of it in the guideline for the following reasons:

- a. There are significant risks in embedding any external guideline or tool within state policy or guidance. For example, there are now significant issues with the inherent use of eWater's MUSIC modelling software to demonstrate compliance with the water quality state interest. To reference another tool which performs a similar role risks similar issues for this guideline and for industry more broadly.
- b. Living Waterways was developed by Healthy Waterways which we understand maintains the intellectual property rights to the document (as the new entity, Healthy Land and Water). If our understanding is correct and if at any stage HLW changes operating arrangements (for example becomes privatised, or is dissolved in the future) the guideline could provide exclusive rights to a single company over a key compliance tool or enshrine a document that cannot later be modified. This could have implications for fair trading and Australian Consumer Law.
- c. Living Waterways was developed as a pathway for compliance with water quality objectives where full compliance was not feasible due to site constraints while improving the uptake/quality of water sensitive urban design (WSUD). In effect, it trades lower water quality for other intangible benefits (liveable cities, resilient water supplies) to achieve this compromise. As we understand the guideline, off-site solutions are intended to provide a pathway for compliance with water quality objectives where full compliance was not feasible onsite due to site constraints. To combine Living Waterways with off-site solutions is considered to be relocating and then discounting the environmental outcomes which is not environmental equivalent or providing a superior outcome. We interpret that the likely intent of including Living Waterways in the guideline was to ensure that multiple benefits would be achieved in the off-site solutions. We suggest that this can be achieved however, by mentioning the multiple benefit desired outcomes in the guideline and requiring that they be reflected in local planning policies.
- d. We consider that there is no justification to apply the 'drop rating system', especially the discounting of water quality objectives to achieve multiple benefits when off-site solutions are applied. Achieving multiple benefits should be inherent in off-site solutions which would generally be larger regional treatment systems and not limited by site constraints to the same extent as small urban developments.
- e. The 'drop rating system' discounts water quality objectives. This is inconsistent with the requirement for providing environmental equivalence.

- f. The discounting of water quality objectives is also inconsistent with the off-site ratios provided in section 4 of the guidelines. In reality, it is expected that due to the uncertainties associated with off-site solutions, temporal equivalence and trading across river basins (spatial equivalence), treatment systems will actually need to be larger than the conventional systems and larger than the systems enabled through the Living Waterways 'drop rating system'.
- g. Despite a number of comprehensive attempts, Stormwater Queensland is not aware of any examples of the Living Waterways guidelines being successfully implemented to urban development in Queensland. As such, the successful application of the guideline appears to be unproven at this point in time.

We thank you for the opportunity to provide feedback on this policy. We would also welcome the opportunity to discuss the policy in person and as noted above, would welcome organising and/or co-sponsoring further engagement events.

Should you have any questions or would like to discuss this response further, please contact the chair of our Advocacy and Membership sub-committee, Paul Dubowski ([paul.dubowski@bmtwbm.com.au](mailto:paul.dubowski@bmtwbm.com.au) or 3831 6744) or myself.

Kind regards



**Dr Darren Drapper**

President, Stormwater Queensland, on behalf of the Stormwater Queensland Committee  
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## **Appendix A: Stormwater Queensland Stormwater Quality Offsets Position Statement**

## **Stormwater Queensland Stormwater Quality Offsets Position Statement**

Stormwater Queensland is committed to providing industry leadership on flexible and innovative pathways for stormwater quality management. These pathways include but are not limited to stormwater quality offsets. This Position Statement sets out Stormwater Queensland's stance on stormwater quality compliance pathways particularly stormwater quality offsets.

This Position Statement has been informed by feedback received from Stormwater Queensland members and the broader industry. Feedback included both written feedback in response to an earlier published draft Position Statement and oral feedback received during the 'Stormwater Quality Offsets Forum' held in November 2015.

This Position Statement will be used as a platform to represent Stormwater Queensland members and the broader industry in collaboratively working with state and local governments and other industry stakeholders towards the development of an appropriate regulatory framework and guidelines.

Stormwater Queensland understands that other initiatives are required to address the reasons why many site-based solutions have not met expectations. Stormwater Queensland will be progressing such initiatives separately.

### ***General***

1. Stormwater Queensland agrees that offsets could form part of sustainable stormwater management if adequately planned for and applied in the right context as outlined in this Position Statement.
2. Stormwater quality should always be attempted to be managed at source first. Stormwater Queensland however also supports the need for flexible and locally appropriate solutions for managing stormwater where on-site treatment is not feasible, partially feasible or where catchment planning has identified a suitable downstream treatment measure that will deliver equivalent or greater benefit.
3. Proponents of offsets schemes (e.g. local authorities) should assess the reasons why offsets are being pursued locally, the feasibility of achieving local objectives and the costs of various flexible and locally appropriate solutions for addressing the local objectives. This assessment should be made prior to collecting offsets and used to inform the local offsets scheme.
4. Capacity building to improve design, construction and maintenance is considered a more appropriate response than offsets for addressing poorly functioning stormwater assets. Such capacity building should be undertaken in conjunction with stormwater asset rectification and offsets where appropriate.
5. Management of stormwater pollutants should be based on a hierarchy of avoidance and mitigation prior to offsetting (in order of preference). Offsets are generally more complex and more costly.
6. Offsets should be limited to developments where on-site stormwater management is highly constrained. In principle, offsets should not be accepted on greenfield sites including within the urban footprint. Exceptions may apply where appropriate total water cycle and catchment planning has deemed otherwise.

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7. Offset schemes do not remove other stormwater management regulatory responsibilities such as flooding, hydrologic objectives and erosion and sediment control.

### **Planning**

8. Offsets schemes should be underpinned by appropriate total water cycle and catchment planning and local authorities should undertake such planning in order to achieve the optimal outcomes.
9. Due consideration must be given to both the current and predicted future condition (including rehabilitation potential) of waterways as part of catchment planning and before an offset is agreed. Hydrology, water quality (including sediments, nutrients, heavy metals, hydrocarbons and gross pollutants) and ecology should all be considered because uncontrolled stormwater can have significant impacts on waterway health.
10. In principle, offset solutions should occur in the same catchment as the concession to avoid impacts on local waterways. Total water cycle and catchment management planning may however, identify appropriate scenarios for cross-catchment trading e.g. where offset solutions in another catchment provide greater benefits. In such instances, the risks to the waterways receiving reduced or no stormwater mitigation in the source catchment and the benefits to the receiving catchment waterways need to be assessed and communicated to the community.
11. Offset schemes should include consideration of how stormwater quality offsets relate to other stormwater management requirements including flow objectives and erosion and sediment control.
12. Offset schemes should include the assessment of spatial, temporal and environmental equivalence. In principle, offset schemes should seek to achieve equivalence when compared to well-designed, constructed and established site-based stormwater treatment solutions. A factor applied to offsets charge may be appropriate where equivalence cannot be achieved. In some instances, it may be appropriate to require a net gain rather than equivalency.

### **Pricing**

13. Proponents of offset schemes (e.g. local authorities) should be required to develop strategies for the collection and acquittal of offset funds prior to their collection.
14. Offset charge pricing should be reflective of appropriate costs including land costs (regardless of current land availability), planning, design, construction, establishment and administration (e.g. for planning and resourcing). Costs should be based on the long-term offset supply including potential future constrained sites. Planning of offset solutions is required to appropriately price offset charges.
15. Offsets schemes should not shift the burden of responsibility for the maintenance of stormwater quality treatment assets onto local authorities without adequate recompense. For example, on sites where the stormwater management systems will remain in private ownership, offsets charges would also need to account for the maintenance, renewal and decommissioning costs in addition to the costs outlined in the above point.
16. The total value of potential offsets and the individual offsets charge should be determined prior to collecting offset funds. The offsets charge should include a contingency factor to account for inflation, risks, equivalency and uncertainties.
17. Offsets collected should not be permitted to exceed the forecast supply of offsite solutions available. In principle, where offset solutions are limited to the same catchment, offset schemes should be based on the equitable distribution of offsets.

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18. Offset funds should not be allocated to general revenue.

***Implementation***

19. Any local authority which is currently or historically collecting offsets funds and which has not yet developed a scheme for the acquittal of stormwater offset funds should cease collecting offsets until a scheme which reflects this Position Statement has been developed. Similarly, any existing offsets schemes which do not reflect this Position Statement should be updated to reflect this Position Statement.
20. Stormwater offset frameworks should be transparent and independently evaluated. The use of offset funds should be reported publically on an annual basis.
21. Evaluation and monitoring of offset frameworks and treatment systems should only be funded through an administration charge portion of the regular offsets charge.