

16 November 2018

Healthy Waters, Department of the Environment and Heritage Protection
Email: spphealthywaters@ehp.qld.gov.au

Attn: Brad Dines

Dear Brad,

RE: Stormwater Queensland Submission on Final Draft Implementation Guidance for Off-site Stormwater Quality Management 2018

Stormwater Queensland (SQ) commends the Department of Environment and Science (DES) on the preparation of a document which guides stormwater quality offset implementation. SQ 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.

The SQ Committee has reviewed the '*Final Draft – October 2018 Implementation Guidance, State Planning Policy State Interest Water Quality 201, Policy 5 (b)—Off-site stormwater quality management*' (the guideline) and prepared this submission. It is noted that a submission on an earlier version of the guideline was previously provided to the DES on 13 November 2017 (refer to Appendix A) on behalf of our members. The SQ Committee is disappointed to find that many of the issues raised in our previous submission do not appear to have been addressed in the revised draft. It is of concern that despite the workshops held with DES on 28 March 2018 and 12 April 2018 and subsequent written feedback from SQ, it would appear that key points have not been implemented.

The table below provides a summary of the issues raised in our 13 November 2017 submission (refer to Appendix A) and the extent to which the current guideline addresses them. The issues are organised according to the level of risk identified in our previous submission. The last column also provides a colour-coded rating which indicates of how well the current draft of the guideline has responded to our previous submission including:

- Green: The issue has been suitably addressed
- Orange: The issue has been addressed in part but would benefit from further improvement
- Red: The issue has not been addressed
- Yellow: The current draft has resulted in a worse outcome compared to the first draft.

We also note that given the importance of this document, SQ circulated it to our members for comment however due to the limited timeframe for consultation, a detailed, collective response which included comments from our members could not be provided within the consultation timeframe. While this submission was prepared by the SQ Committee without input on the current guideline from our members, it is nevertheless considered to represent our members views. This is considered to be the case as our members contributed to the 13 November 2017 (refer to Appendix A) and this submission re-iterates the comments made in our previous submission.

13 November 2017 Submission Point	Issue	DES response	Rating
State regulatory framework			
A	Regulatory gap between the policy and guideline	Does not appear to have been addressed.	
B	Lack of mandatory legislative/regulatory requirements and lack of third-party oversight	The guideline specifies that offset funds should not be allocated to general revenue but the lack of mandatory legislative/regulatory or reporting requirements and third-party oversight remains. The recent review of offsets undertaken by SQ (Appendix B) highlights some of the questionable outcomes for the water quality state interest including due to this issue.	
C	Lack of state interest checks for planning scheme policies	Does not appear to have been addressed.	
D	Lack of acknowledgment of proponents other than local governments e.g. ports or water authorities	Does not appear to have been addressed.	
E	Lack of industry and community engagement	DES has made efforts to undertake some consultation but the concerns expressed during consultation predominantly remain.	
F	Inadequate timeframes for responses	As noted above, the review period for the current guideline constrained proper review and consultation.	
Low-risk Issues			
1	Applicable off-site solutions	SQ supported the draft policy which required 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. SQ is concerned that the omission of these requirements potentially now fails to adequately address the State's interest in Water Quality. Quantifying how an offsite solution adequately compensates for lack of onsite treatment should need to be justified.	

2	Protection of waterways that are identified as having high ecological value	This statement has been strengthened.	
3	Local head of power for offsets and appropriate state-interest checks	Does not appear to have been addressed. SQ has surveyed several Councils already collecting offset funds and are concerned to find that some cannot provide a financial account for the monies collected and/or spent (refer to Appendix B). It remains our considered position that the State should provide detailed guidance and oversight.	
4	Prioritising delivery and the hierarchy approach	The previous SQ submission suggested that the onus should be on a proponent of an off-site solution to demonstrate compliance with this approach. SQ is concerned that the removal of the following statement: ' <i>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.</i> ', is a retrograde amendment lowering the criteria for considering offsets.	
5	Policy documentation	Some improvements in stating what documentation is required from local government policy/planning instruments.	
6	Implementation Planning	The requirement for implementation plans to be prepared has been reworded from 'should preferably' to 'should' in accordance with the submission.	
Medium-risk Issues			
7	Superior outcomes/ environmental equivalence	The requirements for superior outcomes/ environmental equivalence appear to have been removed from the guideline. SQ considers this to be a retrograde amendment which potentially fails the State Water Quality Interest. Quantifying how an offsite solution adequately compensates for lack of onsite treatment should need to be justified.	
8	On-site delivery	SQ interprets that the intent that off-site solutions are only appropriate where an on-site solution ' <i>cannot be feasibly delivered on site</i> ' has been removed from the current revision. The adoption of an (optional) 12,500m ² trigger for offsets is considered a small concession if the criteria to demonstrate feasibility is removed.	

9	Minimum modelling standards/benefit prediction	Does not appear to have been addressed.	
10	Other stormwater water management objectives	Does not appear to have been addressed.	
11	Maintenance burden	The risks noted in the submission have not been acknowledged and the policy reads very one-sided on the topic of maintenance.	
12	Case studies	Does not appear to have been addressed.	
13	Nomenclature	Does not appear to have been addressed.	
High-risk Issues:			
14a	Planning – what should be included in an off-site solution scheme	Does not appear to have been addressed.	
14b	Planning – total water cycle management (TWCM)	The guideline now mentions TWCM but suggests the requisite information can be provided in local catchment plans or stormwater quality infrastructure plans which are insufficient planning documents to facilitate the TWCM philosophy. Also, the guideline now appears to devolve responsibility for TWCM policy to the local level. As shown by Moreton Bay Regional Council, if the water quality interest is to be achieved, TWCM is a minimum standard and therefore the State should create a head of power for it in State policy and guidelines.	
15	Off-site ratios	Does not appear to have been addressed.	
16	Collection of financial contributions	<p>SQ previously had concerns regarding the clause that, <i>'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.'</i> While this statement has been removed, two new statements have been added:</p> <ul style="list-style-type: none"> • <i>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</i> 	

		<p><i>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.</i></p> <ul style="list-style-type: none"> <i>... 'in-lieu fees that reflect cost recovery to achieve compliance consistent with the on-site solution it replaces—in accordance with SPP policy element 5(b)'</i> <p>SQ is concerned that this addresses only the capital cost of providing the asset, but does not consider a broad range of other costs associated with delivering offset solutions.</p> <p>Moreover, the calculation methodology for an equivalent solution should be such that it does not encourage offsets to be the preferred option especially when on-site treatment is feasible, as it is currently happening in some Councils.</p>	
17	Living Waterways	<p>Does not appear to have been addressed. SQ considers there is a contradiction between statements about not diminishing achievement of water quality outcomes and the Living Waterways framework enabling reduced water quality targets. As noted in our previous submission, there are numerous logical reasons which support removing any reference to Living Waterways in this guideline.</p>	

SQ is concerned that many of the key issues raised in previous submissions have either not been addressed (red) or have worsened (yellow). Based on our recent survey of Councils collecting offset funds and a review of the current draft guideline, we have serious concerns that the State's Interest in Water Quality will not be achieved with this guideline.

We thank you for the opportunity to provide feedback on this policy and we would welcome an opportunity to discuss the guidelines further with DES Officers. We may also provide further written comments in the near future depending on the response of our members after the formal consultation period has closed.

To organise the meeting or should you have any questions, please contact the Chair of our Advocacy and Membership sub-committee, Paul Dubowski (paul.dubowski@bmtwqm.com.au or 3831 6744) or myself.

Kind regards



Darren Drapper

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

Appendix A: Stormwater Queensland Submission 13 November 2017

13 November 2017

Healthy Waters, Department of the Environment and Heritage Protection
Email: 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 12,500m². 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 2,500m² 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 or 3831 6744) or myself.

Kind regards



Dr Darren Drapper

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

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.

<http://stormwaterqueensland.asn.au/>

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.

<http://stormwaterqueensland.asn.au/>

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.

Appendix B: Stormwater Queensland Review of Stormwater Offsets

A Review of the Status of Stormwater Quality Offset Collection and Implementation in Queensland

Brad Dalrymple

Stormwater Queensland – Advocacy & Membership Sub-committee

E-mail: Brad.Dalrymple@bmtglobal.com

In Queensland, stormwater quality offsets provide a mechanism whereby local governments collect voluntary payments from developers in lieu of complying with legislated stormwater quality management objectives on site. These local governments are subsequently responsible for utilising these funds to implement stormwater solutions that achieve a better or equivalent outcome external to the site.

To augment the appropriate collection and implementation of stormwater quality offsets within Queensland, the Department of Environment and Science (DES, formerly the Department of the Environment and Heritage Protection) prepared the “Draft Implementation Guidance for Off-site Urban Stormwater Management - Alternative locally appropriate solutions to support achieving the outcomes of the State Planning Policy State Interest Water Quality 2017” (the Guideline).

As outlined in Section 7 of the Guideline, appropriate evaluation, monitoring and reporting should be undertaken for the collection and implementation of voluntary financial water quality contributions ('stormwater quality offsets') collected in-lieu of complying with State Planning Policy stormwater management targets on-site.

Stormwater Queensland (SQ) sent all Councils within Queensland collecting stormwater quality offsets a correspondence requesting responses to a range of questions related to stormwater quality offsets.

Key findings from our assessment include the following:

- *A total of four (4) Councils within Queensland currently collect stormwater quality offsets (whilst the remainder of Councils currently choose not to);*
- *Three of the four councils that collect offsets responded to the survey questions;*
- *For the three Councils (Mackay Regional Council, Ipswich City Council and Logan City Council) that collect offsets and responded to the survey questions:*
 - *Significant funds have been collected in stormwater offsets;*
 - *The water quality benefits of solutions implemented with stormwater quality offset funds by Mackay Regional Council and Logan City Council are predicted to remove significantly more pollutants than would have been removed if on-site treatment was used (with compliance with State Planning Policy pollutant load removal targets);*
 - *The water quality benefits of solutions implemented with stormwater quality offset funds by Ipswich City Council are predicted to be almost as much for total suspended solids, total phosphorus and total nitrogen (but greater for gross pollutants) relative to that which would otherwise have been provided with on-site treatment (with compliance with State Planning Policy pollutant load removal targets);*
- *The four Councils that do collect offsets do not currently comply with some of the recommendations of the Guideline, including planning, spatial equivalence, environmental equivalence and reporting.*

It should however, be noted that the Guideline was only recently released (in September 2017).

It is Stormwater Queensland's position that Councils considering or collecting stormwater quality offsets should review Stormwater Queensland's (2016) Stormwater Quality Offsets Position Statement and the Guideline. It is also highly recommended that Councils that are currently collecting stormwater quality offsets but are unable to comply with the recommendations outlined in the Guideline should commence a review process that facilitates rapid alignment to these reference documents or consider immediately ceasing stormwater quality offset collection.

1. INTRODUCTION

1.1. Background

The State Planning Policy (SPP) (State of Queensland, Department of Infrastructure, Local Government and Planning, 2017) establishes water quality as a 'State Interest', to be managed through local government planning schemes. The commonly acceptable outcome for managing stormwater at the operational (post-construction), phase of a development is to demonstrate compliance with minimum reductions in stormwater pollutant loads through on-site treatment measures.

The Department of Environment and Science (DES, formerly the Department of the Environment and Heritage Protection) recently published the *Draft Implementation Guidance for Off-site Urban Stormwater Management – Alternative locally appropriate solutions (September 2017)*, which supports achieving the outcomes of the State Planning Policy State Interest Water Quality 2017 (the Guideline). Stormwater Queensland held consultation workshops on behalf of its members with DES officers regarding the draft offsets policies. Feedback from SQ members was collated and submitted to DES through its consultation process.

Section 7 of the Guideline recommends appropriate evaluation, monitoring and reporting be undertaken for the collection and implementation of voluntary financial water quality contributions ('stormwater quality offsets' collected in-lieu of complying with State Planning Policy stormwater management targets on-site). This could include the following items:

- Reporting the value of collected stormwater quality offsets;
- Reporting the location and type of off-site solutions delivered;
- Reporting the stormwater management benefits (e.g. pollutant load removed) of off-site solutions delivered.

1.2. Study Objectives

The purpose of this survey was to establish a 'baseline' in relation to the status of stormwater quality offset collection and implementation within Queensland. The study provides comment on existing practices highlighting key actions for Councils to achieve compliance.

2. METHODOLOGY

Stormwater Queensland (SQ) represents members across the stormwater industry, manufacturers, contractors, consultants and local authorities. For the purposes of this paper (and to augment best practice stormwater management within Queensland), SQ coordinated a centralised survey in relation to the current status of stormwater quality offset implementation at various Councils.

On behalf of SQ, the author sent correspondence to various Queensland Councils where the State Planning Policy 'Post-construction phase – stormwater management design objectives' apply. This correspondence requested responses to a series of questions to assess the current status of stormwater quality offset collection within each of these Councils.

The questions were as follows:

1. *To date, has Council previously collected stormwater quality offsets?*
2. *If 'Yes' to Question 1 ... To date, what is the value (\$AUD) of stormwater quality offset contributions received?*
3. *If 'Yes' to Question 1 ... To date, what is the cumulative pollutant load reduction obligation (by catchment) estimated to be achieved by these offsets?*
4. *If 'Yes' to Question 1 ... To date, what is the value (\$AUD) of projects implemented using stormwater quality offset contributions? Please include projects partially funded by offsets with distinction between proportion funded by offsets and other funding mechanisms.*
5. *If 'Yes' to Question 1 ... Can Council provide the details of projects implemented using stormwater quality offset contributions, including value (\$AUD), asset details (e.g. type, location, dimensions) and predicted pollutant load removal?*

6. Can Council please advise any key learnings for future offset collection and implementation?

The survey questionnaire was sent between 5 and 7 June 2018, with responses requested by 20 July 2018 (although some responses were provided after this date). Councils that did not provide a response were provided subsequent requests for responses to be provided.

3. RESULTS

3.1. Summary of Questionnaire Responses

Table 3-1 provides a summary of the responses to the questionnaire. Councils that are known or (from anecdotal reports) understood to currently collect stormwater quality offsets are highlighted.

Table 3-1 Summary of Responses to Questionnaire

Council	Response provided	Answer to Q1	Comments
Brisbane City Council	Yes	No	
Bundaberg Regional Council	Yes	No	Council intends to commence offset collection in the future.
City of Gold Coast	No	-	Anecdotal reports indicate Council does not currently collect offsets.
Gladstone Regional Council	No	-	Anecdotal reports indicate Council does not currently collect offsets, but has previously.
Logan City Council	Yes	-	Detailed response provided. See Section 3.4.
Ipswich City Council	Yes	Yes	Detailed response provided. See Section 3.3.
Mackay Regional Council	Yes	Yes	Detailed response provided. See Section 3.2.
Moreton Bay Regional Council	Yes	No	
Sunshine Coast Council	Yes	No	Significant investigation works undertaken to date by Council to investigate whether it should implement an offset policy, but currently no policy enabling offset collection exists.
Toowoomba Regional Council	No	-	Anecdotal reports indicate Council currently collects offsets. However, Council advised that they do not have the information requested, and it would be unlikely they would be able to offer any firm figures
Townsville City Council	Yes	No	Council is in the process of developing a stormwater quality offsets scheme.

3.2. Summary of Mackay Regional Council Response

Mackay Regional Council (MRC) provided a detailed response to the questionnaire, which is appreciated by Stormwater Queensland. The following text provides a summary of this response.

MRC established a *voluntary mechanism for stormwater quality management* (the mechanism) in August 2014. Via this mechanism, MRC has collected \$1,246,524 from a total of 22 development applications within five creek and river catchments. Table 3-2 provides a summary of the average annual pollutant loads requiring offset via the MRC mechanism.

Table 3-2 Summary of Average Annual Pollutant Loads Requiring Offset via MRC Mechanism

Catchment	TSS (kg/year)	TN (kg/year)	TP (kg/year)
McCreadys Creek	223,344	1,210	366
Bakers Creek	413	3.82	0.77
Pioneer River	4,481	28.05	7.59
Janes Creek	522	2.85	0.86
Reliance Creek	11,815	64.25	19.49
Overall Total	240,575	1309	395

To date, the total value of projects implemented by MRC using the mechanism is \$870,000, which is a 70% spend of funds collected. Table 3-3 provides a summary of the projects implemented using funds collected via the MRC mechanism.

Table 3-3 Summary of projects implemented using MRC mechanism

Project	Details	Value (\$)	Predicted Pollutant Removal (kg/year)		
			TSS	TN	TP
On-farm improvement practices – McLennan's farm	Walkerston (Bakers Creek catchment). 150ha cane farm. 150 litre/year less herbicide applied to farm also predicted.	100,000	240,000	2,200	1,200
Stormwater quality management education	Erosion & Sediment Control Training. Installation of WSUD signage at Blacks Beach Cove (McCreadys Creek catchment) and Royal Sands (Reliance Creek catchment)	60,000	Unknown		
McCreadys Creek South Regional Wetlands – Detailed Design	Richmond (McCreadys Creek catchment). 4.8ha wetland. Detailed design only (not implemented to date). Project has been designed as per Living Waterways framework which has multiple benefits in addition to just water quality	200,000	0	0	0
Little McCreadys Creek Rehabilitation Project	Rural View (McCreadys Creek catchment) 700m long x 70m wide = 4.9ha	150,000	18,700	60	29
Goosepond Creek Revegetation Project	North Mackay – Pioneer catchment. 800m long x 15m wide = 1.2ha. Widening of existing riparian corridor. Although there would be some water quality benefit, the actual benefit has not been modelled.	50,000	Unknown		

Minor revegetation works at McCreadys Creek South Regional Wetlands	Richmond (McCreadys Creek catchment). 480m long. Small initial planting component to commence along Mackay-Bucasia road as per detailed design.	110,000	Unknown		
On-farm improvement practices – Mackay's farm	Walkerston (Bakers Creek catchment). Second 150-ha cane farm. Trials on the second farm have just commenced. Although the report has not yet been completed, pollutant load reductions are assumed to be very similar to McLennan's farm	100,000	Unknown		
Aeration device installation at the Gooseponds (to mitigate against fish kills and remove N)	North Mackay – Pioneer catchment. Although not modelled, Nitrification enables N to become available to plants and microbes. Without nitrification, denitrification does not occur. Denitrification converts N into gas (exporting N out of the wetland).	90,000	Unknown		
Stormwater education signage	Various	10,000	Unknown		
Total value for offset projects		870,000	258,700*	2,260*	1,229*
Total value for on-site treatment if offset collection had not occurred#		1,246,524	240,575	1,309	395

*: excludes the pollutant load removals potentially achieved where the predicted value of that removal is unknown.

#: predicted pollutant removal from Table 3-2

The results provided above indicate that offsets from the alternative works completed are predicted to remove significantly more pollutants than would have been removed if on-site treatment was used (despite not including the treatment performance of projects where the water quality benefits cannot be readily quantified). The results also indicate that the majority of this removed pollutant has come from a single project.

3.3. Summary of Ipswich City Council Response

Ipswich City Council (ICC) provided a detailed response to the questionnaire, which is appreciated by Stormwater Queensland. The following text provides a summary of this response.

ICC has had a mechanism for the collection of stormwater quality offsets through their *Implementation Guideline No. 24 – Stormwater Management of Council's Planning Scheme* since late 2012. ICC advised that their first contributions were received in 2014.

Council did not disclose the value of the offsets received. Table 3-4 provides a summary of the average annual pollutant loads requiring offset via the ICC mechanism.

Table 3-4 Summary of Average Annual Pollutant Loads Requiring Offset via ICC Mechanism

Catchment	TSS (kg/year)	TP (kg/year)	TN (kg/year)	GP (kg/year)	% of total contributions by Catchment
Black Snake Creek	6871.2	34.01	10.03	1008.27	3.66%
Bremer River	40,078.82	198.37	58.50	5,881.13	21.88%
Brisbane River	8,394.61	41.55	12.25	1,231.82	4.47%
Bundamba Creek	11,516.72	57.00	16.81	1,689.95	6.12%
Deebing Creek	4,072.50	20.16	5.94	597.59	2.23%
Goodna Creek	3,552.91	175.97	51.89	5,217.00	19.05%
Ironpot Creek	4,243.48	21.00	6.19	622.68	2.26%
Mihi Creek	9,483.80	46.94	13.84	1,391.64	5.10%
Sandy Creek (Camira)	3,726.43	18.44	5.44	546.81	2.05%
Six Mile Creek	45,134.41	223.39	65.88	6,622.98	23.43%
Woogaroo Creek	18,151.23	89.94	26.49	2,663.50	9.75%
Total	188,889	935	276	27,717	100%

To date, the total value of projects implemented using the mechanism is \$6,083,823. Table 3-5 provides a summary of the projects implemented using funds collected via the ICC mechanism.

Table 3-5 Summary of projects implemented using ICC mechanism

Project	Offset funds contributed (\$)	Other funds contributed (\$)	Total value (\$)	Predicted pollutant removal (kg/year)			
				TSS	TN	TP	GP
Ironpot Creek Stabilisation	966,140	882,020	1,848,160	10,170	2.9	0.5	-
Jim Donald Park Wetland & Harvesting	201,900	-	201,900	26,661	72.7	41.3	4,987.1
Redbank Recreational Reserve Wetland & Harvesting	624,737	-	624,737	4,667	76.58	12.7	2,143.3
Wallaby Ware Park Bioretention & Swale	103,975	-	103,975	3,613	18.6	5.4	614.0
Pollard Park Stabilisation & Infiltration Basins	3,443,277	279,323	3,722,600	33,000	79.0	48.8	9,148.0
Small Creek Channel Naturalisation – Stage 1	358,022	291,783	649,805	81,000.00	647.0	112.0	35,745.0
Franklin Vale Initiative Phase 1*	385,772	-	385,772	-	-	-	-
Total value for offset projects	6,083,823	1,453,126	7,536,949	159,110	897	221	52,367
Total value for on-site treatment if offset collection had not occurred (from Table 3-4)	Unknown	-	Unknown	188,889	935	276	27,717

*: Council is in the process of undertaking revegetation works on private properties within the Franklin Vale Creek catchment as part of their Franklin Vale Initiative (a stormwater quality offsets funded project). Owing to the incomplete status of the project, no pollutant reduction claims have been made for the purposes of water quality offsets reporting.

The results presented above show that the water quality benefits of solutions implemented with stormwater quality offset funds by Ipswich City Council are predicted to be almost as much for total suspended solids, total phosphorus and total nitrogen (but greater for gross pollutants) relative to that which would otherwise have been removed with on-site treatment (with compliance with State Planning Policy pollutant load removal targets). The results also indicate that a significant portion of this removed pollutant has come from a single project.

3.4. Summary of Logan City Council Response

Logan City Council (LCC) provided a detailed response to the questionnaire, which is appreciated by Stormwater Queensland. The following text provides a summary of this response.

The requirements for stormwater quality offset applications are outlined in LCC's (2015) *Planning scheme policy 5–Infrastructure*. Table 3-6 provides a summary of the value of stormwater quality offsets collected by LCC and the average annual pollutant loads requiring offset by LCC.

Table 3-6 Summary of Value of Stormwater Quality Offsets Collected and Average Annual Pollutant Loads Requiring Offset by LCC

Catchment	Total Contribution Collected (\$)	Total Area Offset (ha)	TSS (kg/year)	TN (kg/year)	TP (kg/year)
Oxley Creek	82,331	3.41	4 421	6.65	26..8
Slacks Creek	4,157,000	32.96	42 810	60.8	237
Overall Total	4,239,331	36.37	47,231	67	237

To date, the total value of offset projects implemented by LCC is \$4,682,000, which is 10% more than the value of offset funds collected. Table 3-7 provides a summary of offset projects implemented by LCC.

Table 3-7 Summary of projects implemented by LCC Using Offsets

Project	Details	Value (\$)	Predicted Pollutant Removal (kg/year)			
			TSS	TN	TP	GPs
Moss Street, Slacks Creek	Infiltration/ bioretention basin 1755m ² area (within Slacks Creek catchment)	155,000	2,420	20.3	2.94	N/A
Blackall Street Treatment System (Blackall Street, Hillcrest)	Sediment basin, macrophyte zone and bioretention basin. Stormwater contributions are being retrospectively replaced as developments connect into system. 75-ha catchment (within Slacks Creek catchment).	4,500,000	93,630	141.7	454	8,850
Underwood Industrial Area StormSack installations	Retrospective installation of thirty (30) StormSacks (within Slacks Creek catchment).	27,000	6,700	18.1	115	2,372
Total value for offset projects		4,682,000	96,050	180	572	11,222
Total value for on-site treatment if offset collection had not occurred (from Table 3-5)		4,239,331	47,231	67	237	N/A

The results provided above indicate that offsets from the alternative works completed are predicted to remove significantly more pollutants than would have been removed if on-site treatment was used. The results also show that the majority of this removed pollutant has come from a single project.

4. COMPARISON TO RECOMMENDATIONS OF THE GUIDELINE

Based on the aforementioned results (and discussions with stakeholders within and external to Council), the following aspects of the current status of offset collection and implementation have been compared to the recommendations within the guideline:

- Planning
- Spatial equivalence
- Environmental equivalence
- Evaluation, monitoring and reporting

The following text provides a summary comparison of these aspects. It should however, be noted that the Guideline was only recently released (in September 2017) and the vast majority of projects of both Mackay Regional Council, Ipswich City Council and Logan City Council have been implemented prior to the release of the Guideline. Addressing the following key criteria will assist Councils to achieve full compliance.

4.1. Planning

The Guideline states that “*off-site solutions should only be considered where it is demonstrated to be a superior outcome, or where it cannot be feasibly demonstrated on-site*”.

Based on the information provided by both Mackay Regional Council, Ipswich City Council and Logan City Council, it is likely that these Councils would be confident that off-site solutions have been a more superior outcome to on-site treatment. This appears evident in the “on-farm improvement practices” in Mackay Regional Council where a significant portion of the loads were estimated to be achieved at a fraction of the cost.

For the Councils that did not respond to the survey questions, it would be speculation as to whether they comply with this recommendation. It remains Stormwater Queensland’s position that offsets should only be collected where on-site stormwater treatment is either unlikely to be a superior outcome or cannot be feasibly integrated on site to achieve compliance with given stormwater quality objectives. The examples from Mackay Regional Council, Ipswich City Council and Logan City Council, provide evidence that this is possible.

4.2. Spatial equivalence

The Guidelines states that “*off-site solutions must be in the same catchment as the development site*”. Based on the responses to the survey, it would appear that Logan City Council largely complies with this recommendation, with the majority of offset funds collected and implemented within the Slacks Creek catchment. It would however appear that both Mackay Regional Council and Ipswich City Council do not comply with this recommendation.

Ipswich City Council advised that, for stormwater quality offsets, environmental equivalence is measured at the downstream boundary of the ICC local government area. It is anticipated that Mackay Regional Council have applied a similar strategy.

Considering that the Guideline has only been recently published, and the lead time for these projects, it would be anticipated that moving forward Mackay Regional Council and Ipswich City Council may include spatial equivalence into the Planning element of their strategy.

4.3. Environmental equivalence

The Guideline also states that “*planning for off-site solutions must demonstrate environmental equivalence and consider spatial, temporal, sustainability, receiving waters level of aquatic ecosystems protection and consultation requirements*”. The Guideline also includes an “off-site ratio”¹, with a minimum value of 1.5 to 1.

Based on the survey responses, it would appear Logan City Council complies with this ratio and that Mackay Regional Council also complies with this ratio for total nitrogen and total phosphorus loads (but not for total suspended solids), whilst Ipswich City Council complies with this ratio for gross pollutants only. It should however, be noted that Mackay Regional Council has predicted pollutant load removal rates significantly greater than would have been achieved by on-site treatment (assuming all potential on-site treatment would be successfully operating) even if the performance of initiatives, where the treatment performance is unknown, is excluded from the analysis.

4.4. Evaluation, monitoring and reporting

The Guideline states that “*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 summarizing:*

- *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”.*

As far as Stormwater Queensland is aware, there has been no reporting by Councils to the community (or any other stakeholder group) specifically regarding stormwater offsets, monies collected and projects delivered. However, it should be noted that it is also our understanding that no Councils have been requested to provide this information. Nevertheless, all Councils that have responded to this questionnaire should be acknowledged – particularly the detailed responses provided by Mackay Regional Council, Ipswich City Council and Logan City Council.

This survey is considered an initial step to provide some industry evaluation, monitoring and reporting. It is considered that this process is vitally important to provide transparency and understanding of the benefits or shortfalls from various options to the wider industry. Stormwater Queensland sees this as a valuable tool in knowledge transfer for those attempting to efficiently facilitate an offsets policy.

5. DISCUSSION

The responses to the survey have indicated that, of the four Councils known to receive stormwater quality offsets, one Council (Logan City Council) currently complies with the recommendations outlined in the Guideline, whilst three do not – although (as noted above) the Guideline was recently released. It is considered that non-compliances with the Guideline could be addressed with internal updates by each Council relatively quickly.

Mackay Regional Council, Ipswich City Council and Logan City Council predict that they have (to date) achieved significant reductions in pollutant loads from their respective local government areas at significantly lower cost than would have otherwise been provided by on-site stormwater quality treatment – even if potential alternative on-site stormwater treatment devices were operating successfully. It should, however, be noted that in our opinion the opportunities for offset implementation within the Mackay Regional Council, Ipswich City Council and Logan City Council local government areas (to date) are likely to be have been significantly higher relative to other areas where

¹ DEHP (2017b) does not define “off-site” ratio, but DEHP (2017a) uses the terminology “offsets ratio”, and it is anticipated that this definition is applicable to “off-site ratio”. DEHP (2017a) defines “offsets ratio” as “*an amount in excess of the volume of pollutants that provides a buffer to account for the uncertainty in discharge removal efficiencies of the offset*”.

State Planning Policy pollutant load reduction targets are applicable for new development. The opportunities for offset implementation in more urbanised areas are likely to be significantly lower.

6. CONCLUSION

Stormwater Queensland undertook a survey on the current status of stormwater quality offset collection and implementation from Councils in Queensland. This assessment has shown that a total of four (4) Queensland Councils collect stormwater quality offsets, whilst three (3) responded to the survey questions.

For the Councils that do collect stormwater quality offset funds, a comparison was made to the recommendations of the recently released *Draft Implementation Guidance for Off-site Urban Stormwater Management - Alternative locally appropriate solutions to support achieving the outcomes of the State Planning Policy State Interest Water Quality 2017*. Responses to the survey appear to indicate that the four Councils collecting stormwater quality offsets do not currently comply with all of the recommendations within the Guideline. Nevertheless, based on the feedback information in the survey, the three Councils that responded to the survey questions have predicted via modelling significant reductions in stormwater pollutant loads.

Stormwater Queensland highly recommends that all local governments considering collecting stormwater quality offsets should review the *Stormwater Quality Offsets Position Statement (2016)* and the Guideline. It is also highly recommended that Councils that currently collect stormwater quality offsets but are unable to comply with the recommendations outlined in the Guideline should commence a review process that facilitates rapid alignment to these reference documents or consider immediately ceasing stormwater quality offset collection.

7. ACKNOWLEDGEMENTS

The author would like to thank all Councils that responded to this survey, and all Council staff and Stormwater Queensland Committee members who provided valuable input in the preparation of this document.

8. REFERENCES

Department of Environment and Heritage Protection, 2017a, *Draft Environmental Protection Act 1994 Point-Source Water Quality Offsets Policy, June 2017*.

Department of Environment and Heritage Protection, 2017b, *Draft Off-site Urban Stormwater Management – Alternatively locally appropriate solutions to support achieving the outcomes of the State Planning Policy State Interest Water Quality 2017, September 2017*.

Logan City Council, 2015, *Sc6.2.5 Planning scheme policy 5–Infrastructure*.

The State of Queensland, Department of Infrastructure, Local Government and Planning, 2017, *State Planning Policy*. State of Queensland, Brisbane.

Stormwater Queensland, 2016, *Stormwater Queensland Stormwater Quality Offsets Position Statement*.