
Appendix 11



TOWNSVILLE CITY PLAN 2014 – HEALTHY WATERS CODE

Performance Outcomes/Acceptable Outcomes		Response
Stormwater Management - Protecting Water Quality		
<p>PO1: Development contributes to the protection of environmental values and water quality objectives of receiving waters to the extent practicable.</p>		<p>R1: Complies The proposed development will implement appropriate stormwater quality management practices in order to contribute to the protection of relevant environmental values and water quality objectives to the extent practicable.</p> <p>Refer to Appendix 6 of the Development Application for a copy of the Stormwater Quality Management Plan (SQMP) prepared by Premise.</p>
<p>PO2: High Environmental Value Waters and slightly disturbed waters (shown on Figure 9.1 – High Environmental Value Waters and slightly disturbed waters) are protected from the impacts of development within their catchments. Existing water quality, habitat and biota values, flow regimes and riparian areas are maintained or enhanced.</p>		<p>R2: Not Applicable The subject site is not located adjacent to High Environmental Value Waters and slightly disturbed waters (shown on Figure 9.1 – High Environmental Value Waters and slightly disturbed waters).</p>
<p>PO3: The entry of contaminants into, and transport of contaminants in, stormwater is avoided or minimised.</p>		<p>R3: Complies The proposed development will incorporate appropriate stormwater quality treatment measures during the construction phase and operational phase of the proposed development. Further details in relation to these measures are outlined in SQMP prepared by Premise.</p>
<p>PO4: Within the areas identified as potential acid sulfate soils on Figure 9.2 – Acid sulfate soils, the generation or release of acid and metal contaminants into the environment from acid sulfate soils is avoided by:</p> <ul style="list-style-type: none"> a) not disturbing acid sulfate soils when excavating or otherwise removing soil or sediment, draining or extracting groundwater, excluding tidal water or filling land; or b) where disturbance of acid sulfate soils cannot be avoided, development: 	<p>AO4.1: Development does not:</p> <ul style="list-style-type: none"> a) involve excavating or removing 100m³ or more of soil and sediment at or below 5m AHD; or b) permanently or temporarily drain or extract groundwater or exclude tidal water resulting in the aeration of previously saturated acid sulphate soils; or c) involve filling with 500m³ or more with an average depth of 0.5m or greater that results in: <ul style="list-style-type: none"> i) actual acid sulfate soils being moved below the water table; or 	<p>R4: Complies During the construction phase should the presence of Acid Sulfate Soils be identified on site, then a suitably qualified consultant, will be engaged to prepare a report and advise of the required treatment methods.</p> <p>A reasonable and relevant condition could be imposed if required.</p>



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<p>i) neutralises existing acidity and prevents the generation of acid and metal contaminants; and</p> <p>ii) prevents the release of surface or groundwater flows containing acid and metal contaminants into the environment.</p>	<p>ii) previously saturated acid sulfate soils being aerated.</p> <p>OR</p> <p>A04.2: Development manages waters so that:</p> <p>a) all disturbed acid sulfate soils are adequately treated and/or managed so that they can no longer release acid or heavy metals;</p> <p>b) the pH of all site any water including discharges and seepage to groundwater, is maintained between 6.5 and 8.5 (or an agreed pH in line with natural background);</p> <p>c) waters on the site, including discharges and seepage to groundwater, do not contain elevated levels of soluble metals;</p> <p>d) there are no visible iron stains, flocs or sums in discharge water;</p> <p>e) all reasonable preparations and actions are undertaken to ensure that aquatic health is safeguarded; and</p> <p>f) infrastructure such as buried services, pipes, culverts and bridges are protected from acid attack.</p>	
<p>PO5: Construction activities for the development avoid or minimise adverse impacts on stormwater quality or hydrological processes.</p>		<p>R5: Complies The proposed development will incorporate appropriate stormwater quality treatment measures during the construction phase and operational phase of the proposed development. Further details in relation to these measures are outlined in the SQMP prepared by Premise, refer to Appendix 6 of the Development Application.</p>
Hydrological Processes		
<p>PO6: The stormwater management system:</p>	<p>A06.1: All existing waterways and overland flow paths are retained.</p> <p>A06.2:</p>	<p>R6: Complies Section 4 of the SQMP prepared by Premise, outlines the proposed catchments associated</p>



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<p>a) retains natural waterway corridors and drainage paths; and</p> <p>b) maximises the use of natural channel design in constructed components.</p>	<p>The stormwater management system is designed in accordance with the Development Manual Planning Scheme Policy No. SC6.4 – SC6.4.3.9 Water Sensitive Urban Design Guidelines.</p>	<p>with the site, and the flows which each catchment will deal.</p> <p>In terms of the proposed catchments for Lot 20, these grade toward a discharge point at each north west corner of the site.</p> <p>The proposed stormwater design for Catchment A will divert stormwater runoff from the site and direct it to the swale along part of the western boundary and the discharge point at the north west corner of the catchment.</p> <p>The proposed stormwater design for Catchment B1 and B2 will divert stormwater runoff from the site and direct it to the swale along part of the northern boundary which drains it to the discharge point at the north west corner of the catchment.</p> <p>Stormwater runoff generated will be captured via the swales and will discharge to the bio basin.</p> <p>Catchment C will drain to towards the road.</p> <p>The stormwater management system is designed in accordance with the Development Manual Planning Scheme Policy No. SC6.4 – SC6.4.3.9 Water Sensitive Urban Design Guidelines.</p>
<p>PO7: The development is designed to minimise run-off and peak flows by:</p> <p>a) minimising large areas of impervious material; and</p> <p>b) maximising opportunities for capture and reuse.</p>		<p>R7: Complies The Premise SQMP provides an assessment of the stormwater quantity and quality for the proposed development and the measures and devices that need to be installed to appropriately manage stormwater during the construction phase and the operational phase of the proposed development.</p>
<p>PO8: Stormwater management is designed to:</p> <p>a) protect in-stream ecosystems from the significant effects of</p>	<p>AO8: The stormwater management system is designed in accordance with the Development Manual Planning Scheme Policy No. SC6.4</p>	<p>R8: Complies The stormwater management system will be designed in accordance with the Development Manual Planning Scheme Policy No. SC6.4 -</p>



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<p>increased run-off frequency by capturing the initial portion of run-off from impervious areas; and</p> <p>b) create conditions such that the frequency of hydraulic disturbance to in-stream ecosystems in developed catchments is similar to pre-development conditions.</p>	<p>- SC6.4.3.9 Water Sensitive Urban Design Guidelines.</p>	<p>SC6.4.3.9 Water Sensitive Urban Design Guidelines.</p> <p>Further details in relation to these measures are outlined in the SQMP prepared by Premise.</p>
<p>PO9: Stormwater management is designed to prevent exacerbated in-stream erosion downstream of a development site by controlling the magnitude and duration of sediment-transporting, erosion-causing flows.</p>	<p>AO9: The stormwater management system is designed in accordance with the Development Manual Planning Scheme Policy No. SC6.4 – SC6.4.3.9 Water Sensitive Urban Design Guidelines and SC6.4.3.8 Stormwater Management Plans for Development.</p>	<p>R9: Complies The stormwater management system will be designed in accordance with the Development Manual Planning Scheme Policy No. SC6.4 – SC6.4.3.9 Water Sensitive Urban Design Guidelines and SC6.4.3.8 Stormwater Management Plans for Development.</p> <p>Further details in relation to these measures are outlined in the SQMP prepared by Premise.</p>
Stormwater Drainage Generally		
<p>PO10: The proposed stormwater management system or site works does not adversely affect flooding or drainage characteristics of properties that are upstream, downstream or adjacent to the development site.</p>	<p>AO10.1: The development does not result in an increase in flood level or flood duration on upstream, downstream or adjacent properties.</p> <p>AO10.2: The stormwater management system is designed and constructed in accordance with the Development Manual Planning Scheme Policy No. SC6.4 – SC6.4.4.4 Stormwater Drainage Design, SC6.4.3.9 Water Sensitive Urban Design Guidelines; and SC6.4.6.4 Stormwater Drainage.</p>	<p>R10: Complies The development will not result in an increase in flood level or flood duration on upstream, downstream or adjacent properties.</p> <p>The stormwater management system will be designed and constructed in accordance with the Development Manual Planning Scheme Policy No. SC6.4 – SC6.4.4.4 Stormwater Drainage Design, SC6.4.3.9 Water Sensitive Urban Design Guidelines; and SC6.4.6.4 Stormwater Drainage.</p> <p>Further details in relation to these measures are outlined in the SQMP prepared by Premise.</p>
<p>PO11: Development does not cause ponding, or changes in flows and velocities such that the safety, use and enjoyment of nearby properties are adversely affected.</p>	<p>AO11: The stormwater management system is designed and constructed in accordance with the Development Manual Planning Scheme Policy No. SC6.4 – SC6.4.4.4 Stormwater drainage</p>	<p>R11: Complies The proposed development will ensure the stormwater management system is designed and constructed in accordance with the Development manual planning</p>



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	design; SC6.4.3.9 Water Sensitive Urban Design Guidelines; and SC6.4.6.4 Stormwater Drainage.	scheme policy SC6.4 – SC6.4.4.4 Stormwater drainage design; SC6.4.3.9 Water sensitive urban design guidelines; and SC6.4.6.4 Stormwater drainage. Further details in relation to these measures are outlined in the SQMP prepared by Premise.
PO12: The drainage network has sufficient capacity to safely convey stormwater run-off from the site.	AO12: Development is undertaken in accordance with the Development Manual Planning Scheme Policy No. SC6.4–SC6.4.4.4 Stormwater drainage design; SC6.4.6.4 Drainage structures and SC6.4.6.4 Stormwater drainage.	R12: Complies The proposed development will be undertaken in accordance with the Development manual planning scheme policy SC6.4 – SC6.4.4.4 Stormwater drainage design; SC6.4.6.5 Drainage structures and SC6.4.6.4 Stormwater drainage. Further details in relation to these measures are outlined in the SQMP prepared by Premise.
PO13: The stormwater management system: a) provides for safe access and maintenance; and b) where relevant, provides for safe recreational use of stormwater management features.		R13: Complies The proposed stormwater management system, provide for safe access and maintenance by the Applicant.
Point Source Waste Water Management (other than contaminated stormwater and sewage)		
PO14: Waste water is managed in accordance with a waste management hierarchy that: a) avoids waste water discharge to waterways; or b) if waste water discharge to waterways cannot practicably be avoided, minimises waste water discharge to waterways by re-use, recycling, recovery and treatment for disposal to sewer, surface water and groundwater.		R14: Complies The SQMP clearly identifies the treatment systems required to treat run off from the various catchment associated with each of the proposed uses. The site will be connected to Council’s reticulated wastewater network.
PO15: Any treatment and disposal of waste water to a waterway: a) protects the applicable water quality objectives for the receiving waters; and b) avoids adverse impact on ecosystem health of receiving waters.		R15: Complies The SQMP clearly identifies the treatment systems required to treat run off from the various catchment associated with each of the proposed uses. The site will be connected to Council’s reticulated wastewater network.
PO16: Development avoids or minimises and appropriately manages soil disturbance or altering natural hydrology in nutrient hazardous areas.		R16: Not Applicable The site is not within a nutrient hazardous area.
PO17: Waste water discharge to waterways is managed to avoid or minimise the release of nutrients of concern so as to minimise the occurrence, frequency and intensity of coastal algal blooms.		R17: Complies The SQMP clearly identifies the treatment systems required to treat run off from the various



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		<p>catchment associated with each of the proposed uses.</p> <p>The site will be connected to Council's reticulated wastewater network.</p>
Constructed Lakes and Artificial Waterways		
<p>PO18-PO28 (AO18-AO28): This part of the code is not applicable to the proposed development, given the type and nature of the proposed development.</p>		
Efficiency and Whole of Life Cycle Cost		
<p>PO29: Life cycle costs are minimised, taking into account acquisition, construction, establishment, operation, monitoring, maintenance, replacement and disposal costs.</p>		<p>R29: Complies The proposed development will be staged across 3 Stages, so too maintain life cycle costs and ensure the development is conducted efficiently and effectively.</p>
<p>PO30: The design of the development allows for sufficient site area to accommodate an effective stormwater management system.</p>		<p>R30: Complies The subject development site is sufficient in size to provide sufficient area to accommodate for an effective stormwater management system, refer to the SQMP prepared by Premise.</p>
<p>PO31: The proposal provides for the orderly development of stormwater infrastructure within a catchment, having regard to:</p> <ul style="list-style-type: none"> a) existing capacity of stormwater infrastructure and ultimate catchment conditions; b) discharge for existing and future upstream development; and c) protecting the integrity of adjacent and downstream development. 		<p>R31: Complies The proposed development will be staged across 3 stages, which will provide for the orderly development of stormwater infrastructure within each of the identified catchments.</p>
<p>PO32: Proposed stormwater infrastructure remains fit for purpose for the life of the development.</p>		<p>R32: Complies The proposed stormwater infrastructure will remain fit for purpose for the life of the development, through appropriate maintenance.</p>
<p>PO33: Proposed stormwater infrastructure can be easily accessed and can be maintained in a safe and cost effective way.</p>	<p>AO33: The stormwater management system is designed in accordance with the Development Manual Planning Scheme Policy No. SC6.4 – SC6.4.3.9 Water Sensitive Urban Design Guidelines and SC6.4.4.4 Stormwater Drainage Design.</p>	<p>R33: Complies The proposed stormwater management system, provide for safe access and maintenance by the Applicant.</p>
Water Management in Reconfiguring a Lot		
<p>PO34 (AO34): This part of the code is not applicable to the proposed development, given the type and nature of the proposed development.</p>		



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Ship-Sourced Pollutants	
PO35-PO38 (AO35-AO38): This part of the code is not applicable to the proposed development, given the type and nature of the proposed development.	