



Wet Tropics
Waterways

WET TROPICS REPORT CARD 2023

URBAN WATER STEWARDSHIP FRAMEWORK REPORT





Urban Water Stewardship Report

Date: April 2023

Acknowledgements

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Report compiled April 2023

Executive Summary

Nutrients, sediments and pesticides are pollutants that affect the resilience of coral reefs and are also key contaminants derived from urban areas. Understanding and addressing the loads of these contaminants from urban landscapes to the Great Barrier Reef lagoon may contribute to achieving water quality improvement targets set out in the Reef 2050 WQIP. Environmental stewardship is demonstrated through investment in technology or practices that meet or exceed standards for minimising or avoiding environmental harm or may potentially enhance the receiving environment.

This report summarises the results of Urban Water Stewardship workshops held individually with seven of the eight Local Government Areas (LGAs) in the Wet Tropics between November 2022 and February 2023 to assess performance in the management of potential nutrient and sediment loads. The workshops were conducted with individual LGA's and involved facilitated discussion around key management activities undertaken by councils, developers and contractors with representatives from each LGA. This was the second round of Urban Water Stewardship workshops conducted in the Wet Tropics with the first round completed in 2020-21 and held with all eight of LGA's ([WTW 2021](#)).

Each of the three management activities were assessed and practice level performance was assigned an ABCD rating, whereby:

- “A” denoted innovative and/or aspirational practices (lowest risk to water quality);
- “B” denoted current best practices (low to moderate risk to water quality);
- “C” denoted minimum standard practices (moderate risk to water quality); and,
- “D” denoted outdated practices (highest risk to water quality).

Overall, The Wet Tropics Region received a grade of “B” for urban water stewardship performance indicating that, on average, best practice management is in place and that this represents a low to moderate risk to water quality in the region. There was a slight increase in score, from 12.3 to 13.4, and a resultant improvement from the ‘C’ grade recorded in the first round in 2020-21.

The regional scores for 2022-23 increased from those recorded in 2020-21 for all three UWSF management components: developing urban, established urban, and point source. The grades for each of these management components for 2022-23 were, however, unchanged from 2020-21.

For water management in developing urban areas, the average grade across the Wet Tropics LGAs was a “B”, indicating that, on average, activities associated with urban land development in the region met current best practice.

For water management in established urban areas, the average grade across the Wet Tropics LGAs was a “C”, indicating that stormwater management in established urban areas



within the region is being done at levels inconsistent with current best practice, posing a moderate risk to water quality.

For point source urban water management, the average grade across the Wet Tropics LGAs was a “B”, indicating that the majority of activities associated with managing wastewater in the region meet current best practice and pose a low to moderate risk to water quality.

Introduction

Nutrients and sediments affect the resilience of coral reefs and are also key contaminants derived from urban areas. Understanding and addressing nutrient and sediment loads from urban landscapes to the Great Barrier Reef lagoon may contribute to achieving water quality improvement targets set out in the Reef 2050 WQIP.

Environmental stewardship is demonstrated through investment in technology or practices that meet or exceed standards for minimising or avoiding environmental harm or may potentially enhance the receiving environment.

This report summarises the results of the second round of Urban Water Stewardship Framework (UWSF) workshops held individually with seven of the eight local government areas (LGAs) within the Wet Tropics region (Figure 1) in 2022-23 to assess performance in the management of potential nutrient and sediment loads and involved facilitated assessment of key management activities undertaken by councils, developers and contractors.

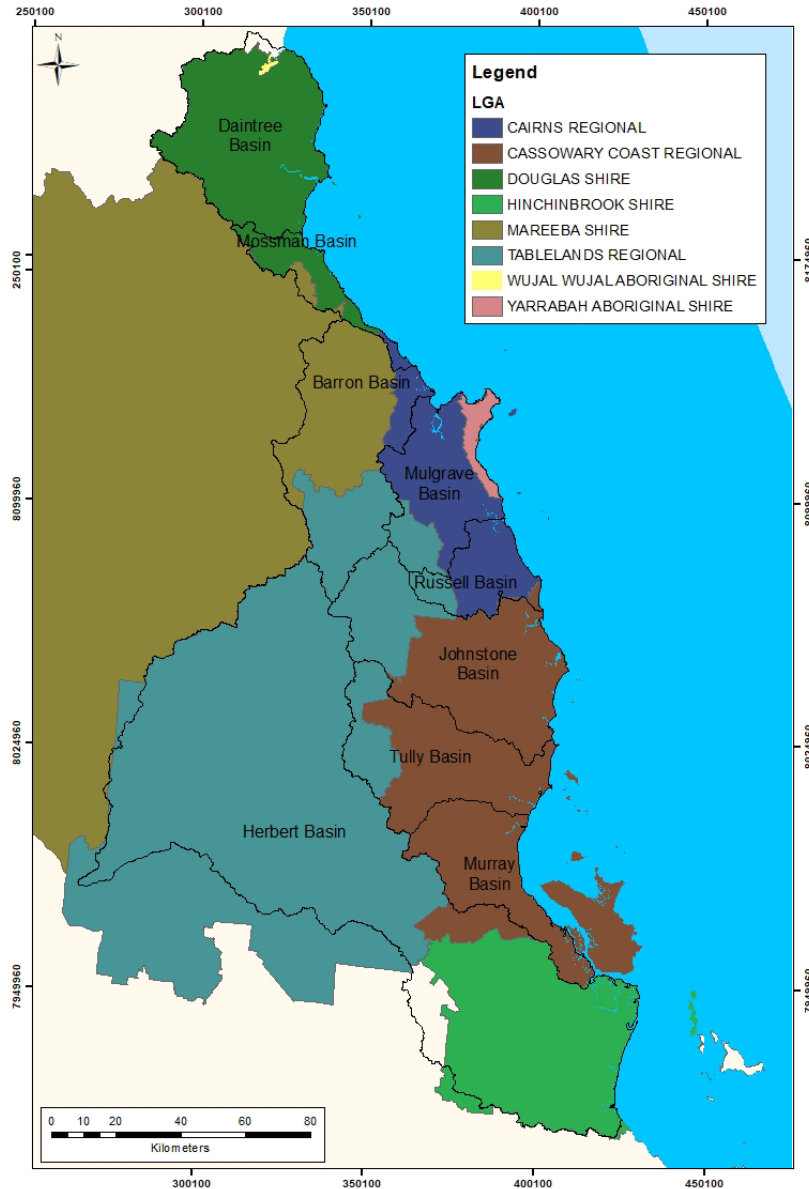


Figure 1. The eight local government areas (LGAs) in the Wet Tropics region. LGAs are colour coded and overlaid on the Wet Tropics basin boundaries. The Wujal Wujal LGA (yellow) is located on the northern boundary of the Daintree Basin.

This first round of Urban Water Stewardship workshops conducted in the Wet Tropics was completed in early 2021 and held with all eight LGA's ([WTW 2021](#)). Results including scores and grades from 2022-23 are compared with those from 2020-21 to assess performance and identify change in the management of urban water.

Methods

The stewardship assessments were conducted in accordance with the Urban Water Stewardship Framework Implementation Manual Version 2.1 (Department of Environment and Science (DES) (2022)). Urban Water Stewardship Framework (UWSF) workshops were conducted individually with each LGA between November 2022 and February 2023. The Wet



Tropics LGAs included in UWSF workshops are Wujal Wujal Aboriginal Shire, Douglas Shire, Mareeba Shire, Cairns Regional, Yarrabah Aboriginal Shire Council, Cassowary Coast Regional, Tableland Regional and Hinchinbrook Shire. For 2022-23 one LGA was unable to attend their workshop and undertake the assessment, whilst the other seven LGAs undertook their individual assessment. Workshops involved an assessment of management practice level being applied using the methods outlined in the UWSF Manual and recorded these in the UWSF scoring spreadsheet (version 11). At each workshop, representatives of the LGA provided information and cited evidence on their practices for management activities within the three UWSF components. It is important to note that because the assessments were on urban water stewardship, the focus was on the urban footprint of the LGAs. The LGAs in the Wet Tropics cover a very large area that is not urban, including very substantial areas of rural land use. The three UWSF components are described below and are presented with their general themes and the management activity goals (MAGs) in Table 1.

[Water Management In Developing Urban Areas](#)

Nutrient and sediment loads can potentially emanate from urban areas under development for residential, commercial or industrial purposes and are frequently associated with the mobilization of soils. The developing urban (DU) management activity groups (MAGs) were designed to assess management performance relating to operational goals linked to facets of urban water management associated with land development, including storm water management plans.

[Water Management In Established Urban Areas](#)

Nutrient and sediment loads from established residential, commercial or industrial areas are often associated with nutrient and sediment pollution linked to stormwater runoff. The established urban (EU) management activity groups (MAGs) were designed to assess management performance relating to operational goals linked to stormwater asset planning & maintenance, storm water management plans, and catchment protection in established urban areas.

[Point Source Urban Water Management](#)

Under the UWSF, point sources are considered to be those that emanate from wastewater treatment facilities and the linked sewer network. They do not consider licensed industrial point sources occurring within the urban footprint or privately owned wastewater treatment facilities. The point source (PS) management activity groups (MAGs) were designed to assess management performance for facets of wastewater facility planning & operation, along with sewer network management.

A total of 66 activities, linked to the Developing Urban, Established Urban and Point Source framework components, were assessed at each workshop, with the number of activities for these three components being, 28, 21 and 17, respectively. Separate assessment sessions

were held for each framework component to allow focussed discussions among the relevant experts and to reduce local government time and resources for participating in the framework assessment process.

Table 1. The UWSF components, management activity goals (MAGs) and operational goals (DES 2022).

Component	Management Activity Group number	Sub-Element	Group theme	Operational goal
Developing Urban (DU)	1	1.1	Local government policy associated with stormwater management and erosion and sediment control	Stormwater infrastructure planning and design objectives support water quality improvement by being aligned with total water cycle management principles, with Council leading by example in terms of how it manages its own developments.
	2	1.1	Development applications, development assessment and associated condition enforcement	The development assessment process promotes and supports improved water quality through the use of permitting conditions that are site-specific, developed by suitably qualified persons and properly assessed and enforced.
	3	1.1	Site-based stormwater management and erosion and sediment control (ESC) plan development	Site-based stormwater management and ESC plans are capable of delivering outcomes that meet the water quality objectives defined in the development approvals process
	4	2.1	Site-based stormwater management and ESC implementation	Desired water quality objectives are met through effective implementation of site-based stormwater management and ESC plans
	5	3.1	Partnerships and collaboration [including science and research]	Increased capacity to identify, apply and enforce best practice ESC and WSUD principles leads to more effective ESC and WSUD outcomes
		3.2	Guidance material development, training, capacity building and community involvement	
	6	4.1	Urban water monitoring, modelling, and evaluation program	Risk of severe erosion impacts is reduced through site inspections at appropriate times and the monitoring of downstream water quality for high-risk developments
		4.2	Reporting program	
Established Urban (EU)	1	1.2	Total water cycle management-based stormwater planning and design	Effective stormwater management is supported by policy objectives based on total water cycle management principles
	2	1.2	Stormwater Management Plan development	New stormwater treatment assets are created at priority locations and treatment using solutions that satisfy multiple objectives
	3	2.2 and 2.3	Stormwater Management implementation	SPP stormwater quality objectives for established urban areas continue to be met through effective and ongoing asset maintenance process and the protection of natural ecosystem features that provide pollution reduction services
	4	3.1	Partnerships and collaboration [including science and research]	Level of collaboration, training and knowledge sharing is high, resulting in greater capacity to implement catchment-based total water cycle-based management and waterway protection and restoration effectively
		3.2	Guidance materials, training, capacity building and community involvement	
	5	4.1	Urban water monitoring, modelling and evaluation program	Understanding of stormwater runoff influence on catchment water quality and the effectiveness of approved stormwater treatment devices is sufficient to inform policy and planning regarding where adjustments to stormwater management practices are required.
		4.2	Reporting program	

Component	Management Activity Group number	Sub-Element	Group theme	Operational goal
Point Source (PS)	1	1	Policy, planning, and governance associated with sewage wastewater management	Fewer license exceedances and reduced nutrient loads are achieved by good governance with respect to planning and operation and, through minimising the volume of wastewater discharge wherever practical
	2	2.1	Sewerage network asset management and maintenance	Potential for network system failure reduced through effective planning of sewerage network asset management and maintenance activities
	3	2.2	Implementation of the STP and sewer network infrastructure planning process	Urban planning takes into account wastewater infrastructure capacity requirements for expected population increases, while the design of new infrastructure adequately balances costs with risk associated with the potential for wet weather overflow-related environmental impacts
	4	3	Partnerships, collaboration, capacity building and training	Water quality improvement outcomes are achieved through a combination of innovation derived from collaborative R&D programs, effective staff capacity building and training and effective customer education programs
	5	4	Monitoring, evaluation, reporting and improvement process	Environmental impacts of releases reduced through effective monitoring, early detection and ongoing reporting, review and improvement

Score aggregation

Activities were rated using unique assessment criteria, accompanied by guidance notes to explain the intended basis for activity evaluation. All activities were rated on a four-point 'ABCD' scale, with score ranges given for each rating category (Table 1). The same scale was used to score and grade practice level when individual activities were aggregated to the level of management activity groups (MAGs), components, overall LGAs and the overall region. The process of aggregating scores to each MAG level was as per DES (2022) and involved averaging across relevant activities and/or activity groups.

Table 2 Rating categories and colour coding for the UWSF results.

Terminology	Practice standard			
Practice Level Rating	A	B	C	D
Practice level performance	Innovative and/or Aspirational	Current Best Practice	Minimum Standard	Superseded Practices
Water quality risk framework	Lowest risk	Low-Moderate risk	Moderate risk	High risk
Score Range	>17.5	12.5-17.4	5.0-12.4	<5.0

Deriving Results

To provide information of more direct relevance to participating local governments, MAG-level group ratings were derived. This is because the framework assigns local government

operational goals to each MAG so local governments can use them to evaluate their performance with respect to achieving those goals.

For public reporting, report card region-level results are to be used and can be presented in coaster form (for an example see Figure 2). MAG-level result summaries are not likely to be relevant to the broader community readership. Results are to be summarised using the following activity groupings:

- Elements (analogous to *indicators*)
- Components (analogous to *indicator categories*)
- Overall Urban Stewardship (analogous to *overall grade*)

Element-level groupings relate to the following four elements, which are common to each component:

- **Policy, planning and governance** (relates to policy setting, along with planning document and procedure document content)
- **Infrastructure management and maintenance** (relates to on-ground management activities)
- **Social approaches** (relates to capacity, training, collaboration, and research & development)
- **MERI** (relates to monitoring & evaluation and how information is used to improve aspects of the above three elements)

Three of these are part of the ‘classic’ planning and implementation cycle. A fourth, social approaches, is an enabling element that is integrated within and supports the planning and implementation cycle.

The steps involved to produce these results are as follows.

- Element-level summary results for individual local government areas are derived by averaging across relevant MAGs.
- Averaging common element scores across local government areas.
- Averaging common component scores across local government areas.
- Averaging overall urban water management scores across local government areas.

See Table 3 below for Elements and corresponding MAGs for each component (referring to Table 1 for the numbered MAG descriptions). An example of a coaster with this level of reporting is presented in Figure 2.

Table 3 MAGs linked to elements for each framework component.

Element	Relevant Developing Urban MAGs	Relevant Established Urban MAGs	Relevant Point Source MAGs
Policy, planning and governance	1,2 and 3	1 and 2	1
Infrastructure management and maintenance	4	3	2 and 3
Social approaches	5	4	4

MERI	6	5	5
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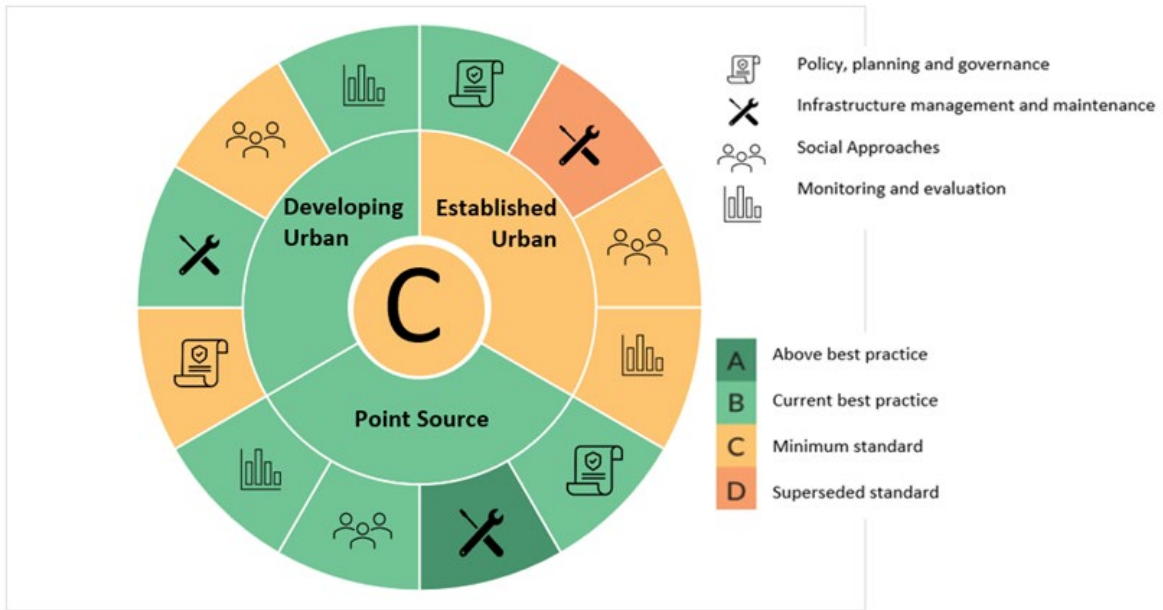


Figure 2 Example of reporting for public release of UWSF results using icons to represent elements, and the colour grading system.

Results

The overall score and grade for each LGA and the Wet Tropics region are presented for 2022-23 and 2020-21 in Table 4. The score and grade for each of the three components and their related MAGs for each LGA and the Wet Tropics region (averaged from data of all participating LGAs) are presented in Table 5 for 2022-23 and Table 6 for 2020-21. For the 2022-23 assessments the regional results are derived from the seven participating LGA's with one LGA that was unable to attend workshops and undertake the assessment. Note that the identity of the LGAs have been deidentified to maintain confidentiality.

The overall regional score for 2022-23 was 13.4 (graded B), which improved from the slightly lower score of 12.3 and a grade of 'C' for 2020-21 (Table 4). For the 2022-23 regional scores, point source management was the highest scoring component (graded 'B'), developing urban (graded 'B') the second highest scoring component and established urban (graded 'C') the lowest scoring component at the regional level (Table 5). The 2022-23 scoring order and grades for the regional components was unchanged from 2020-21 (Table 6). Some changes were notable between the 2022-23 and 2020-21 assessment, for example all three components at the regional level improved in score for 2022-23 from the previous assessments, although not enough to improve the grades. The management activity goal (MAG) grades for individual LGAs typically showed an improvement in 2022-23 at the lower scoring range with fewer 'D' grades for established urban, and fewer 'C' grades for developing urban (Table 5 and Table 6). Whilst many LGA scores for specific MAGs improved, some declined. It is possible that declines in score were a result of a more focused self-assessment conducted at each LGA workshop than was the case for 2020-21. Since 2020-21 was the first assessment there was a steeper learning curve for all workshop

participants and the 2022-23 workshops were conducted with more experience and familiarity with the technical and specific nature of the assessments.

The higher scores for point source are consistent with the greater regulatory focus on point source effects on water quality compared to diffuse source effects on water quality within urban environments. Management of point source effects on water quality is, by nature, targeted to very specific locations and associated infrastructure, for example wastewater treatment plants. In contrast, diffuse source pollution related to new developments and established urban areas, provide challenges to their management due to the greater number and types of interventions required to mitigate emissions. The improvement in scores for LGAs were often associated with the introduction and implementation of planning and management initiatives across the components that have been in development over recent years.

Additional challenges to urban water management specific to the Wet Tropics region relate to the very high rainfall that can occur and the steep topography, particularly in coastal areas where run-off and stream discharge rates can be very high over short periods of time. Whilst high rainfall events are expected to occur during the wet season, they can also occur out of season, for example the rainfall events in coastal areas of the Wet Tropics during 2021-22 (September, May and June). Such out of season events may represent a higher risk to the management of water quality for diffuse sources due to storm water run-off and the capability to implement effective erosion and sediment control measures.

Table 4 Overall UWSF scores and grades for Local Government areas (LGAs) and the Wet Tropics region from the 2022-23 and 2020-21 assessments.

	LGA1	LGA 2	LGA 3	LGA 4	LGA 5	LGA 6	LGA 7	LGA 8	Region
Overall score 2022-23	12.9	16.5	13.0	9.3	12.9	14.5		14.1	13.4
Overall score 2020-21	10.3	14.9	12.8	7.9	13.2	13.6	11.5	14.5	12.3

Water quality risk: ■ High risk (<5.0) | ■ Moderate risk (5 to <12.5) | ■ Moderate-low risk (12.5 to <17.5) | ■ Lowest risk (≥17.5) | ■ No data available

Comparing the 2022-23 scores and grades for the seven LGAs, one overall grade was 'C', (moderate risk to water quality, with a score of 9.3) and six were 'B' (low to moderate risk to water quality with scores from 12.9 to 16.5), which was one more 'B' grade than for 2020-21 (Table 4). As in 2020-21, there was some high variation between LGAs for several MAGs relating to Developing Urban and Established Urban, which shows the different stages of practice management adoption within the LGAs of the region. However, this variation tended to be less distinct in 2022-23 than in 2020-21. For example, management activities for Developing Urban relating to 'site inspections to reduce the risk of severe erosion impacts and the monitoring and reporting of stormwater runoff treatment' varied between lowest risk (scoring 18.5) to highest risk (scoring 6.5) for water quality in 2022-23 compared to scores of 20 and 0 for 2020-21 (Table 5 and Table 6). The MAG scores also emphasise the variation of strengths and weaknesses of practices within LGAs.

Table 5 Scores and grades for components and their management activity goals for each local government area (LGA) and the region for 2022-23.

Component and management activity goals (MAGs) (Water quality risk: ■ High risk (<5.0) ■ Moderate risk (5 to <12.5) ■ Low-Moderate risk (12.5 to <17.5) ■ Lowest risk (≥17.5) ■ No data available)	LGA 1	LGA 2	LGA 3	LGA 4	LGA 5	LGA 6	LGA 7	LGA 8	Region
Developing Urban	14.2	17.0	12.5	7.8	14.4	15.1		14.0	13.6
1. Stormwater infrastructure planning and design is continually improving for more effective total water cycle management.	17.0	16.8	14.5	9.8	15.3	14.0		13.8	14.4
2. The development assessment process promotes and supports improved water quality in terms of reducing sediment loads.	18.3	19.0	14.8	11.5	17.5	16.5		17.3	16.4
3. Site based stormwater management planning is capable of delivering water quality improvement.	14.0	13.5	7.0	3.0	9.0	10.0		10.0	9.5
4. Continuous improvement in stormwater management practices on development and construction sites, and reduced sediment loads reaching receiving waters.	15.0	20.0	14.5	8.0	15.0	16.0		12.5	14.4
5. Increased capacity to apply best practice ESC principles to deliver effective ESC measures on site and as part of ESC compliance auditing.	10.0	14.5	14.5	8.0	12.0	18.5		15.0	13.2
6. Risk of severe erosion impacts reduced through site inspections at appropriate times and the monitoring and reporting of stormwater runoff treatment.	11.0	18.5	10.0	6.5	17.8	15.5		15.3	13.5
Established Urban	8.8	12.4	10.2	8.0	9.4	13.7		10.1	10.4
1. Continuous improvement in catchment management through integrated total water cycle planning and design.	10.0	12.0	12.0	11.0	5.0	13.0		5.0	9.7
2. Continuous improvement in stormwater system management through integrated total water cycle planning.	11.5	12.0	14.5	5.5	7.0	15.0		6.5	10.3
3. Reduction in nutrients and sediments leaving established urban areas.	9.0	16.0	8.0	12.0	14.0	15.0		12.0	12.3
4. Increased capacity to implement catchment based total water cycle management and landscape restoration through collaboration with industry and the community.	10.5	12.5	11.5	9.3	16.3	11.0		15.5	12.4
5. Greater knowledge base to improve the way catchment and water management activities are implemented to achieve the desired outcomes.	3.0	9.5	5.0	2.0	4.5	14.5		11.5	7.1
Point Source	15.8	20.0	16.4	12.1	15.8	14.7		18.2	16.1
1. Fewer license exceedances and reduced nutrient loads released to water as a result of WSP actively pursuing strategies for reducing discharge, including: managing issues associated ageing STP infrastructure before they get critical; and maximising the use of recycling and beneficial reuse options.	17.0	20.0	16.0	12.3	16.5	15.8		16.5	16.3
2. Potential for failure reduced through effective planning of sewerage network asset management and maintenance activities.	15.0	20.0	15.0	13.5	15.0	15.0		18.5	16.0
3. The capacity of wastewater treatment plant assets with respect to expected population increases is managed by collaboration between the WSP with other parts of council and State Planning, and additional wet weather overflow nutrient loads linked to Infiltration and Illegal Connection (I&I) issues are well understood and mitigated.	18.0	20.0	15.0	10.0	17.5	12.5		20.0	16.1
4. Innovative approaches and whole of catchment total water cycle management solutions to reduce nutrient loads from effective networks and collaborations. Reduced frequency of unplanned releases from effective staff capacity building and training. Further nutrient emission reductions are achieved through customer education and improved influent quality.	15.0	20.0	16.0	13.0	15.0	16.0		19.5	16.4
5. Environmental impacts of releases reduced through effective monitoring, early detection and ongoing reporting, review and improvement.	14.0	20.0	20.0	11.5	15.0	14.0		16.5	15.9

Table 6 Scores and grades for components and their management activity goals for each local government area (LGA) and the region for 2020-21.

Component and management activity goals (MAGs) (Water quality risk: ■ High risk (<5.0) ■ Moderate risk (5 to <12.5) ■ Low-Moderate risk (12.5 to <17.5) ■ Lowest risk (≥17.5))	LGA 1	LGA 2	LGA 3	LGA 4	LGA 5	LGA 6	LGA 7	LGA 8	Region
Developing Urban	10.9	14.2	9.9	8.1	15.0	14.1	15.8	14.4	12.8
1. Stormwater infrastructure planning and design is continually improving for more effective total water cycle management.	12.5	13.3	12.0	10.5	13.5	10.5	13.0	11.8	12.1
2. The development assessment process promotes and supports improved water quality in terms of reducing sediment loads.	13.3	14.8	15.3	12.5	19.3	17.1	16.8	16.8	15.7
3. Site based stormwater management planning is capable of delivering water quality improvement.	6.0	10.0	6.0	6.0	10.0	11.9	13.5	12.0	9.4
4. Continuous improvement in stormwater management practices on development and construction sites, and reduced sediment loads reaching receiving waters.	13.5	17.5	14.5	11.5	16.5	15.0	15.0	16.0	14.9
5. Increased capacity to apply best practice ESC principles to deliver effective ESC measures on site and as part of ESC compliance auditing.	0.0	10.0	6.0	8.0	14.0	13.0	16.7	14.0	10.2
6. Risk of severe erosion impacts reduced through site inspections at appropriate times and the monitoring and reporting of stormwater runoff treatment.	20.0	19.8	5.5	0.0	17.0	17.4	20.0	15.8	14.4
Established Urban	4.3	10.8	12.8	5.1	9.3	13.7	5.7	10.7	9.1
1. Continuous improvement in catchment management through integrated total water cycle planning and design.	10.0	11.0	15.0	4.0	11.0	15.0	11.0	10.0	10.9
2. Continuous improvement in stormwater system management through integrated total water cycle planning.	1.0	7.0	8.0	1.0	6.5	16.0	5.5	7.0	6.5
3. Reduction in nutrients and sediments leaving established urban areas.	2.0	12.0	15.0	8.0	8.0	14.0	9.0	9.0	9.6
4. Increased capacity to implement catchment based total water cycle management and landscape restoration through collaboration with industry and the community.	8.5	12.3	11.0	5.5	17.8	12.8	1.0	12.0	10.1
5. Greater knowledge base to improve the way catchment and water management activities are implemented to achieve the desired outcomes.	0.0	11.5	15.0	7.0	3.0	10.5	2.0	15.5	8.1
Point Source	15.7	19.6	15.6	10.6	15.4	12.8	13.1	18.3	15.1
1. Fewer license exceedances and reduced nutrient loads released to water as a result of WSP actively pursuing strategies for reducing discharge, including: managing issues associated ageing STP infrastructure before they get critical; and maximising the use of recycling and beneficial reuse options.	15.3	20.0	16.0	10.5	15.8	14.2	20.0	18.8	16.3
2. Potential for failure reduced through effective planning of sewerage network asset management and maintenance activities.	15.0	20.0	15.0	10.0	15.0	10.0	10.0	20.0	14.4
3. The capacity of wastewater treatment plant assets with respect to expected population increases is managed by collaboration between the WSP with other parts of council and State Planning, and additional wet weather overflow nutrient loads linked to Infiltration and Illegal Connection (I&I) issues are well understood and mitigated.	15.0	20.0	12.5	10.0	15.0	12.5	15.0	17.5	14.7
4. Innovative approaches and whole of catchment total water cycle management solutions to reduce nutrient loads from effective networks and collaborations. Reduced frequency of unplanned releases from effective staff capacity building and training. Further nutrient emission reductions are achieved through customer education and improved influent quality.	13.0	17.8	16.0	9.5	17.0	15.0	12.5	17.0	14.7
5. Environmental impacts of releases reduced through effective monitoring, early detection and ongoing reporting, review and improvement.	20.0	20.0	18.5	13.0	14.0	12.5	8.0	18.0	15.5

Note that scores in italics indicate the LGA MAG included non-applicable questions and weighting was adjusted as described in the methods.

This assessment can be used by LGAs to identify management activities that will benefit most from improvement and that could assist with sourcing resources to improve urban water management and lower risk to water quality. Each LGA will be provided with a confidential report providing their USWF results, the Wet Tropics region results, and the assessment spreadsheet. Evaluation of results and recommendations will be provided in the reports.

Confidence

The assessment of Urban Water Stewardship includes a measure of the confidence surrounding the data and analysis used in the UWSF. Assessment of confidence is based upon five criteria covering the maturity of the method (stage of development), level of data validation, representativeness (spatial and temporal factors, and sample size), directness of measurements, and measured error. The confidence rank is based on the score of the summed criteria. Confidence scores (1 – 3) for each criterion were weighted and then summed to provide the final score and rank. Further information on the methods used for measuring confidence are provided in the technical report ([WTW 2023](#)).

Table 7 Confidence associated with Urban Water Stewardship Results for the 2022-23 monitoring period. Confidence criteria are scored 1-3 and then weighted by the value identified in parenthesis, as per the WTW environmental assessments ([WTW 2023](#)) with adaptations for the Urban Water Stewardship Framework (DES 2022). Final scores (6 – 18) are additive across weighted confidence criteria. Summary rationales are given below each criterion.

	Maturity of methodology (x0.4)	Validation (x0.7)	Representativeness (x4)	Directness (x0.7)	Measured error (x0.7)	Final	Rank
UWSF 2022-23	1	1	2.6	1	1	12.9	3
Rationale	UWSF ratings based on ISP-endorsed method	No reference to use of primary data for UWSF activity ratings (pre and during workshop)	Seven of the eight LGAs in WT region included in assessment. Second complete assessment following pilot in 2019.	The UWSF assessment process was applied at the LGA urban area urban footprint scale (i.e. not to particular areas within an LGA) and based on the most common scenario (i.e. not to a particular case).	No measure of error quantified		

Rank based on final score: 1 (very low): 6 – 8.4; 2 (low): >8.4 – 10.8; 3 (moderate): >10.8 – 13.2; 4 (high): >13.2 – 15.6; 5 (very high): >15.6 – 18.

References

DES (Department of Environment and Science) 2022. Urban Water Stewardship Framework Implementation Manual -Version 2.1.

WTW (Wet Tropics Waterways) 2021. Urban Water Stewardship Framework Report. Wet Tropics Waterways and Terrain NRM, Cairns.



WTW (Wet Tropics Waterways) 2023. Wet Tropics Report Card 2023 (reporting on data 2021-22). Waterway Environments: Methods. Wet Tropics Waterways and Terrain NRM, Cairns.