WATER SENSITIVE SA

Business plan 2017-18

July 2017

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1. Executive Summary

As Water Sensitive SA enters its fourth year of providing training and resources for practitioners to advance the uptake of water sensitive urban design (WSUD) practices, we will build upon the recommendations within the 2014-15 to 2016-17 three-year review of the program (the program review) undertaken during February to May 2017 to focus our efforts upon greatest needs. Strategic partnerships, have enabled greater resources within the 2017-18 program to be directed to the integration of WSUD performance based policy within the planning system and research translation to provide the evidence base for further investment in WSUD.

Adoption of WSUD policy and guidelines within planning system

Water Sensitive SA will work with Department of Environment, Water and Natural Resources (DEWNR) Green Infrastructure Project's planning team, in consultation with Department of Planning, Transport and Infrastructure (DPTI) (Planning), to undertake a review and update of the SA Planning Policy Library (SAPPL) in relation to WSUD and green infrastructure.

Stakeholder engagement

Water Sensitive SA will consult with the development and building industries to gain an understanding of their capacity building needs, with a view to developing future targets resources and training for these sectors and gather information to showcase best practice WSUD by private industry.

Water Sensitive SA will engage with members of community groups to gain an understanding of what a water sensitive community means to them, and to discover their views on how a WSUD approach will improve their lifestyle and wellbeing.

Training and community of practice

Water Sensitive SA will continue to offer technical training and our seminar series to provide opportunities for peer-to-peer learning (including site visits), and research translation. Priority topics for this financial year will be construction and maintenance of WSUD assets, WSUD for planners and development assessment engineers, and design of green roofs and walls. Delivery of our course community course "WSUD in your backyard" will be expanded through our interested local government partners during 2017-18.

Communications

We will continue to provide latest resources and news to our subscribers through our e-newsletter and website. Opportunities to enhance our social media profile will be investigated to communicate key messages, and promote exemplar WSUD projects and events, including a closer working relationship with Stormwater SA to develop a media strategy that relates the benefits of best practice WSUD to the everyday lives of the community, the environment and the economy.

Subject to additional funding, a suite of WSUD "how to" and project "showcase" videos will be developed to demonstrate best practice WSUD to a broad audience, together with VoxPop interviews on our YouTube channel of members of the community describing in their own words how the transition to a sensitive city will improve their daily lives.

Technical resources

Water Sensitive SA has developed a number of case studies describing WSUD projects in the public realm over a range of scales. There is growing demand for information on how to apply WSUD in private developments. We will work with the development industry over the coming 12 months to add further case study resources and sites to our WSUD projects and image gallery interactive map.

Water Sensitive SA will build upon existing work by Melbourne Water and the Cities of Marion and Holdfast Bay to develop a guide to understanding capital costs for the construction of WSUD assets for greenfield, retrofit and asset renewal scenarios, together with suitable maintenance regimes and costs for a range of WSUD assets.

Research adoption pathways

In January 2017 the Goyder Institute for Water Research (Goyder Institute) released the report, *Implementing water sensitive urban design in stormwater management plans*, which provides the foundation to enable a jump step in South Australia's capability to deliver WSUD. This report provides excellent foundation material for use in the Water Sensitive SA Priority Project 5 Model for Urban Stormwater Improvement Conceptualisation (MUSIC) guidelines for SA. Further investment will be sought during 2017-18 to deliver this project.

The CRC for Water Sensitive Cities has agreed to invest in research adoption pathways in South Australia in partnership with Water Sensitive SA. This will expand our research translation capability (from approximately 0.1FTE to 0.4FTE) and provide sufficient resources to ensure South Australian needs are embedded in the next three years of this national research program. In addition, Water Sensitive SA will provide a service to the Cooperative Research Centre for Water Sensitive Cities (CRCWSC) linking national research programs with the SA practitioners.

CRCWSC Tranche 2 projects of focus this year will be:

- IRP1 – Preparing a Water Sensitive Cities (WSC) transition plan for Adelaide.
- IRP2 – Cost-benefit analysis framework and tool for WSUD and green infrastructure.
- IRP3 – Evidence based integrated urban planning across different scales.
- IRP4 – Achieving water sensitive outcomes for infill development.
- Tools and products.

Priority projects (PPs)

PP1 – Cost-benefit analysis framework and tool for WSUD and green infrastructure will be delivered in partnership with the CRCWSC national research project IRP2, as described in Section 1.6.

PP2 – Lifecycle cost analysis. The cost-benefit analysis framework and tool will incorporate whole of life costs of WSUD projects. In addition, a brief fact sheet detailing whole-of-lifecycle costs for a range of WSUD assets will be developed as a guide for practitioners.

In 2017-18 the following priority projects will be completed:

PP3 – WSUD guideline for small-scale development. This guideline will offer a range of deemed to satisfy solutions for developments of up to one allotment into three, together with solutions for townhouses, apartments, and commercial/industrial developments that meet the SA WSUD policy and agreed Council engineering requirements.

PP4 – Online stormwater assessment tool for small-scale development. The Milestone 1.2 report, due for release in early July, provides an analysis of detention requirements for three scenarios for all Greater Metropolitan Adelaide Councils and has been checked against results from a cross section of Council practitioners. The report includes recommendations regarding "best fit" design criteria to provide a consistent approach across metropolitan Adelaide

PP7 – Green infrastructure and WSUD planning policy review. The primary objective of this project is to develop performance-based planning policies, design standards and guidelines (planning provisions) on green infrastructure and WSUD to inform the drafting of the Code, Standards and Guidelines, particularly in the context of the Code-assessed pathway.

2. Who we are

Water Sensitive SA is a capacity building program that provides stakeholders across all disciplines within the development and urban water management industries, with the support they need to achieve the best water sensitive urban design (WSUD) outcomes.

Developers, planners, urban designers, engineers, landscape architects, scientists, builders and maintenance workers all have roles in the development of our cities and suburbs, and many of them recognise the value of WSUD and incorporate it in new infrastructure projects and developments. Water Sensitive SA provides these professions with access to the latest WSUD information; training on know how to apply it properly; and an opportunity to gain valuable insight from the experiences of other practitioners; guidelines, tools and training to inspire and facilitate the delivery of best practice WSUD.

Every capital works project, infrastructure renewal and new development represents an opportunity for smarter water management that contributes to the creation of a more liveable, water sensitive community. Water Sensitive SA will bring about a cultural shift in which WSUD is widely recognised and embraced.

3. Our vision and objective

Water Sensitive SA will continue to support Adelaide and our regions on their journey to become water sensitive communities that are sustainable and resilient to climate change, and have intergenerational equity, and to aid in the creation of more liveable cities.

Our Vision

To create water sensitive communities that are liveable, sustainable, productive and resilient.

Liveable

Sustainable

Source: S.Bryars

Productive

Resilient

Our objective and mission

Our objective is that:

- WSUD is an integral component in urban development and major projects to facilitate the transition of the state's cities and towns to water sensitive communities.
- All relevant government and industry sectors and the community have the commitment, knowledge and skills to work towards this common objective.

Our mission is to provide leadership for government, industry and broader stakeholders through innovation and flexibility in WSUD-relevant policy and design. We will bring about a cultural shift in which WSUD is widely recognised and embraced. We will provide practitioners with guidelines, tools and training to inspire and facilitate the delivery of world-class projects and developments.

4. Priorities for 2017-18

A three-year review of the program (the program review) was undertaken during February to May 2017.One-to-one interviews were conducted with each of our investment partners, and an on-line survey undertaken by government and industry WSUD practitioners from our subscriber database. The Water Sensitive SA program for 2017-18 incorporates the outcomes of this review along with the outcomes from the Water Sensitive SA Steering Committee strategic planning workshop held in May 2017. The key outputs proposed for 2017-18 are described below.

4.1. Adoption of WSUD policy and guidelines within planning system

The issue of greatest need for action that emerged from the program review, is to continue efforts to embed WSUD policy within the planning system. Introduction of the SA WSUD policy principles and targets into the proposed Planning and Design Code would complement the intended shift to a performance-based policy approach within planning policy.

During late 2016 and early 2017, nine SA Murray-Darling Basin Councils, including Water Sensitive SA partner Rural City of Murray Bridge, successfully introduced WSUD performance policy into their Development Plans, within the Natural Resources Management policy module. This policy, developed as part of the *Regional Integrated Water Management Development Plan Amendment* (DPA), sets a new standard for development plan policy in SA.

Water Sensitive SA is currently working with Department of Environment, Water and Natural Resources (DEWNR) Green Infrastructure Project's planning team, in consultation with Department of Planning, Transport and Infrastructure (DPTI) (Planning), to undertake a review and update of the SA Planning Policy Library (SAPPL) in relation to WSUD and green infrastructure.

The core deliverables of this project will be:

1. High level objectives and principles to inform strategies, policies and plans that facilitate, or could potentially facilitate, green infrastructure and WSUD
2. 'Model' performance-based planning policies, design standards and guidelines (planning provisions) on green infrastructure and WSUD to inform the drafting of the Code, Standards and Guidelines, particularly in the context of the Code-assessed pathway
3. A framework for an assessment tool to enable assessment of green infrastructure and WSUD elements of a development against the performance criteria

The Water Sensitive SA Online tool for stormwater management for small-scale development is recognised as a potential basis from which to build a broader framework for the assessment of all green infrastructure and WSUD.

Submission from the consulting industry for delivery of this project will be invited in late July 2017. Water Sensitive SA will consult directly with our partners and others in the development of this model policy and associated resources.

4.2. Stakeholder engagement

Development industry

While best practice WSUD represents business as usual for many within the development industry, some sectors will need support to transition to a new approach. Water Sensitive SA will consult with the development and building industries to gain an understanding of their capacity building needs, with a view to developing future targets resources and training for these sectors.

Community

Water Sensitive SA will engage with members of community groups to gain an understanding of what a water sensitive community means to them, and to discover their views on how a WSUD approach will improve their lifestyle and wellbeing.

4.3. Training and community of practice

Practitioners

Water Sensitive SA will continue to offer technical training and our seminar series to provide opportunities for peer-to-peer learning (including site visits), and research translation. Priority topics for this financial year will be construction and maintenance of WSUD assets, WSUD for planners and development assessment engineers, and design of green roofs and walls.

Community – "WSUD in your backyard"

Our course "WSUD in your backyard" has been delivered in five community workshops, in conjunction with the Natural Resources Adelaide and Mount Lofty Ranges (NR AMLR) Urban Engagement team and as part of the *Living Smart* community sustainability program at the City of Charles Sturt, City of Mitcham and City of Unley. This course will be offered to our local government partners during 2017-18.

4.4. Communications

The program review identified that SA WSUD practitioners prefer to receive information regarding technical resources and news on best practice WSUD via our e-newsletter and links to our website. We will continue to provide latest resources and news to our subscribers through our e-newsletter and website.

Both Water Sensitive SA and industry peak body Stormwater SA have identified the need to raise awareness of stormwater management and the role of WSUD to deliver more liveable communities in the media. We will work with Stormwater SA to develop a media strategy that relates the benefits of best practice WSUD to the everyday lives of the community, the environment and the economy.

To maximise the reach of the program, video recordings of selected Water Sensitive SA seminars will feature on our YouTube channel.

Subject to additional funding, a suite of WSUD "how to" and project "showcase" videos will be developed to demonstrate best practice WSUD to a broad audience, together with VoxPop interviews on our YouTube channel of members of the community describing in their own words how the transition to a sensitive city will improve their daily lives.

Opportunities to enhance our social media profile will be investigated to communicate key messages, and promote exemplar WSUD projects and events.

4.5. Technical resources

Demonstration of best practice WSUD via case studies

Water Sensitive SA has developed a number of case studies describing WSUD projects in the public realm over a range of scales. There is growing demand for information on how to apply WSUD in private developments. We will work with the development industry over the coming 12 months to add further case study resources and sites to our WSUD projects and image gallery interactive map.

Lifecycle costing guideline

Water Sensitive SA will build upon existing work by Melbourne Water and the Cities of Marion and Holdfast Bay to develop a guide to understanding capital costs for the construction of WSUD assets for greenfield, retrofit and asset renewal scenarios, together with suitable maintenance regimes and costs for a range of WSUD assets.

4.6. Research adoption pathways

4.6.1. Goyder Institute for Water Research

In January 2017 the Goyder Institute for Water Research (Goyder Institute) released the report, *Implementing water sensitive urban design in stormwater management plans*, which provides the foundation to enable a jump step in South Australia's capability to deliver WSUD. The report offers guidance on stormwater quality and quantity modelling for SA conditions, including an assessment of the Model for Urban Stormwater Improvement Conceptualisation (MUSIC) providing recommendations regarding appropriate climate data, soil parameters, run-off pollution generation data and routing parameters for SA.

This report provides excellent foundation material for use in the Water Sensitive SA Priority Project 5 MUSIC guidelines for SA. Further investment will be sought during 2017-18 to deliver this project.

4.6.2. Cooperative Research Centre for Water Sensitive Cities

The CRC for Water Sensitive Cities has agreed to invest in research adoption pathways in South Australia in partnership with Water Sensitive SA. This will expand our research translation capability (from approximately 0.1FTE to 0.4FTE) and provide sufficient resources to ensure South Australian needs are embedded in the next three years of this national research program, referred to as Tranche 2 Integrated Research Projects (IRPs). Water Sensitive SA will provide Regional Manager functions as a service to the CRCWSC, including:

- advocate for sufficient research capacity, and level of industry expertise and engagement to deliver CRCWSC Tranche 2 projects for the South Australian Region
- monitor and assess the progress, performance and utilisation of CRCWSC Tranche 2 projects applicable to the South Australian Region to ensure delivery of milestones and outcomes
- build strong networks between participants, facilitate collaboration across disciplines and organisations, and participate in key regional forums to promote and assist the delivery of the regional CRCWSC Tranche 2 projects
- facilitate engagement between researchers and industry to ensure project outcomes meet end-user needs
- facilitate adoption of CRCWSC research outputs
- manage the interface between the RAP and CRC Executive Team

CRCWSC Tranche 2 projects are:

IRP1 – Preparing a Water Sensitive Cities (WSC) transition plan for Adelaide. Two workshops have been held in Adelaide to date to (i) benchmark current policy, governance and practice; and (ii) establish a vision of what a water sensitive Adelaide will look like. The final workshop to be held in July 2017 will develop strategies to support Adelaide's progress towards our desired urban water future. Water Sensitive SA will continue to support this project by communicating outcomes to WSUD practitioners, and providing forums for decision makers and practitioners across the urban water management industry to convene to further the objectives of the WSC Transition Plan.

IRP2 – Cost-benefit analysis framework and tool for WSUD and green infrastructure. Water Sensitive SA in conjunction with Adelaide and Mount Lofty Ranges NRM Board, and DEWNR Green Infrastructure Project are collaborating with the CRCWSC. Commencing in early 2017, the project includes a suite of case studies from the sub-catchment to precinct scale for Australian capital cities to monetise the benefits of urban cooling via WSUD and green infrastructure. A South Australian case study that centres on valuing the benefits of the conversion of a degraded watercourse to a living stream for Breakout Creek (end Torrens River channel) has been approved.

This project will deliver upon the requirements of Water Sensitive SA Priority Projects 1 and 2. and the Program Manager is a member of the industry partner project steering committee

IRP3 – Evidence based integrated urban planning across different scales. "Aspiring water sensitive cities will have to embed water sensitive practices that influence the biophysical infrastructure and built form of the city. There are a range of integrated urban planning functions and instruments (PFIs) such as planning policy, regulation, legislation, incentives and standards that guide the form and application of such practices. Existing PFIs vary from city to city, as do the urban planning systems and processes that comprise the mechanisms for applying them and requiring compliance.

IRP3 aims to provide targeted guidance to multiple case study regions on how to effectively advance their city shaping, water sensitive practices by applying a framework for integrated urban and water planning. IRP3 project will develop this framework and supporting processes, software and guidelines through a number of industry case studies." (CRC WSC)

IRP4 – Achieving water sensitive outcomes for infill development. This project will investigate solutions from an allotment to precinct scale, considering mass water and energy balances and whole of lifecycle costs of a range of WSUD solutions. An early deliverable for this project will be the development of design guidance for the built form for infill developments, building upon research from Tranche 1 of CRCWSC. We have engaged with DPTI and are investigating opportunities to integrate this project with the new *Planning and Design Code and Design Standards*. The Program Manager chairs the industry partner steering committee for this project.

Tools and products. The CRCWSC had developed a range of tools to help practitioners to apply research outputs, for example the Water Sensitive Cities Microclimate Toolkit that demonstrates the urban cooling benefits of a range of WSUD solutions via simple manipulation of land cover status of satellite imagery. We will work with the CRCWSC to raise awareness of these tools and products amongst practitioners and facilitate training where demand exists.

4.7. Priority projects (PPs)

PP1 – Cost-benefit analysis framework and tool for WSUD and green infrastructure will be delivered in partnership with the CRCWSC national research project IRP2, as described in 1.6 above.

PP2 – Lifecycle cost analysis. The cost-benefit analysis framework and tool will incorporate whole of life costs of WSUD projects. In addition, a brief fact sheet detailing whole-of-lifecycle costs for a range of WSUD assets will be developed as a guide for practitioners.

In 2017-18 the following priority projects will be completed:

PP3 –WSUD Guideline for small-scale development. The majority (approximately 90%) of small-scale infill development consists of additions, single dwellings, and one allotment divided into two or three. The deemed to satisfy guideline will offer a range of solutions for developments up to one allotment into three that meet the SA WSUD policy and agreed Council engineering requirements. In addition, a general guideline will provide a range of WSUD solutions for other categories of small-scale infill development including townhouses, apartments and commercial/industrial developments. This project will be delivered as part of the contract with Organic Engineering for PP4.

PP4 – Online stormwater assessment tool for small-scale development. The Milestone 1.2 report, due for release in early July 2017, provides an analysis of detention requirements for three scenarios for all Greater Metropolitan Adelaide Councils, and has been verified against results from a selection of Adelaide Council practitioners. The report includes recommendations regarding "best fit" design criteria to provide a consistent approach across metropolitan Adelaide. The online stormwater assessment tool for small-scale development and associated guideline will be available early 2018.

PP7 – Green infrastructure and WSUD planning policy review. The proposed deliverables of the project are:

- High-level objectives and principles to inform strategies, policies and plans that facilitate green infrastructure and WSUD.
- Performance-based planning policies, design standards and guidelines (planning provisions) on green infrastructure and WSUD to inform the drafting of the Code, Standards and Guidelines, particularly in the context of the Code-assessed pathway.
- A framework for an assessment tool to enable an assessment of green infrastructure and WSUD elements of a development against the performance criteria.

Subject to further investment, Water Sensitive SA will deliver:

PP5 – MUSIC Guidelines for SA. Research released by the Goyder Institute for Water Research, *Implementing water sensitive urban design in stormwater management plans,* paves the way for guidance on the input variables for the MUSIC model for SA.

PP6 – Review of WSUD technical guidelines. An informal national network of WSUD capacity building programs has been established. Opportunities are being investigated to share in the intellectual property of interstate WSUD best practice guidelines as part of the update of the South Australian Guideline.

5. The people behind the program

Governance

Water Sensitive SA program development and implementation is overseen by a steering committee consisting of eight leaders in the fields of engineering, planning, landscape design and research. This committee is responsible for setting the program's strategic direction and acting as its ambassadors.

- Keith Downard (chair)
- Dr Peter Dillon
- Baden Myers
- Dr Sheryn Pitman
- Greg Ingleton
- Joe La Spina
- Andrew King
- Andrew Thomas

In February 2018, the three-year appointment of the committee members expires. An expression of interest for membership of the Water Sensitive SA steering committee will be issued in the latter half of 2017, with existing members eligible for reappointment.

Program management for Water Sensitive SA is currently being delivered under a service contract with the Adelaide and Mount Lofty Ranges Natural Resources Management (AMLR NRM) Board, managed by the Department of Environment, Water and Natural Resources (DEWNR), on behalf of the program partners

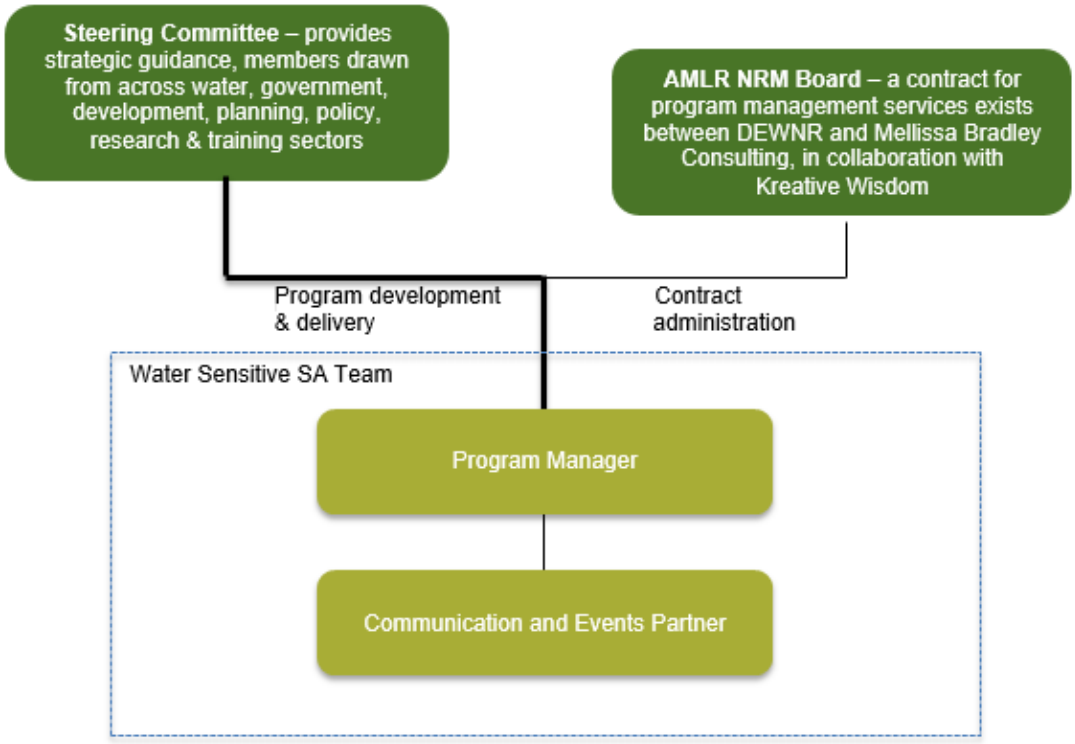

Figure 5.1 Water Sensitive SA Governance structure

Investigations into possible future governance arrangements, including potential incorporation, will be undertaken by the Program Manager under the guidance of the Steering Committee during 2015-16 and 2016-17.

Project delivery team

On behalf of the project partners, the Program Manager (Mellissa Bradley) and Communication and Events Partner (Kathryn Bothe) are responsible for the delivery of the program under a service contract with the AMLR NRM Board.

Project partners

The investment partners are: AMLR NRM Board, Local Government Research and Development Scheme, Local Government Association, City of Salisbury, City of Onkaparinga, City of Playford, City of Port Adelaide Enfield, City of Charles Sturt, City of Burnside, City of Marion, City of Mitcham, City of Tea Tree Gully, City of Unley, Rural City of Murray Bridge, SA Water, EPA, Stormwater SA and the Australian Government National Landcare Programme.

In addition, the University of South Australia, through Goyder Institute initiatives, provide in-kind program support.

Figure 5.2 Program investment partners

6. Our program

ASPIRATIONAL PROGRAM GOAL

Water Sensitive Urban Design (WSUD) is an integral component of any development or infrastructure project and is considered vital in facilitating the systemic transition to water sensitive communities. All relevant government and industry sectors have the commitment, knowledge and skills to meet this common goal.

LONGER-TERM OUTCOMES

- Greater connection between communities and their environment (both local and remote)
- Increased amenity values
- Reduced impact of run-off from stormwater and priority watercourses in aquatic, coastal and marine environments
- Increased demand and supply of alternative, fit-for-purpose water sources
- Productive uses of alternative water sources maximised and contributing to urban food production
- Urban watercourse protection with high quality aquatic and biodiversity outcomes
- Integrated climate change adaptation using water to green our suburbs and reduce heat island effects.
- Reduced flood risk

	INTERMEDIATE OUTCOMES	ACTIVITIES
Policy development	• Decision makers and communities understand the multiple benefits of WSUD including enhanced liveability, resilience, sustainability and productivity. • Consistency and equity in the application of WSUD in new developments and infrastructure projects.	• Facilitate the incorporation of practitioner expertise into agency processes to develop an implementation framework for SA WSUD policy. • Advocate for changes in WSUD policy and practice in government, industry and public forums.
Technical resources	• Practitioners have the guidelines and tools necessary to inform planning, design, construction and maintenance of WSUD assets.	• Review existing technical guidelines for WSUD in SA and regionalise several interstate guidelines in partnership with other WSUD capacity building programs. • Create resources, including online tools, and deemed to comply guidelines, to support implementation of WSUD policy.
Communications	• Practitioners and the broader community are informed of techniques to apply WSUD over a range of scales.	• Deliver 'Water for Liveability' campaign to raise practitioner and community awareness of the benefits of WSUD and how it can be applied. • Case studies, e-newsletters, blogs and online forums.
Coordinated approach to training	• Practitioners efficiently deliver best practice integrated water management and WSUD technologies, with reduced financial risk.	• Provide training regarding WSUD planning, detailed design, construction, operation and maintenance including: detailed design of biofilters, WSUD 101 for planners and development assessors, construction and maintenance of vegetated stormwater management systems.
Institutional capacity	• Increased ability of various agencies and industry sectors to collaborate on projects and discuss and debate the technical, political and socio-economic issues associated with mainstream uptake of WSUD.	• Provide forums for practitioners across government and industry to network and discuss WSUD policy, technical, political and socio-economic matters and implementation challenges (establishing a community of practice).
Protecting our investment	• The whole-of-life costs of WSUD assets are understood.	• Develop reference materials to document the capital, operational and maintenance costs associated with WSUD to inform budgeting processes of developers and Councils for capital works, operations, maintenance and asset renewal.
Research	• Accessible research increases practitioner trust in the benefits and application of WSUD.	• Work with researchers such as the Goyder Institute, CRC for Water Sensitive Cities and CSIRO to provide research outcomes of relevance to the practitioner base in an accessible form. • Inform future research where appropriate.

Figure 6.1 Water Sensitive SA program outcomes and activities

What we offer

The Water Sensitive SA program has been developed under a logical framework drawing upon the outcomes of extensive consultation undertaken with practitioners throughout the development of the business case (Alluvium 2012), the program establishment project (Designflow 2014) and more recently with the appointment of the program manager.

Enabling factors to support the transition to a water sensitive community described by Brown (2007) including: Socio-political capital; champions; accountability; trusted and reliable science; market receptivity; bridging organisations; and binding targets have also guided program development. Our core business deliverables are detailed in Table 7.1.

As the hub for WSUD activity and learning in South Australia, Water Sensitive SA provides:

- WSUD policy development and implementation pathways
- networking opportunities and peer-to-peer learning on strategic, policy and technical matters
- specialist training to address key knowledge and skills gaps
- more accessible WSUD research for practitioners
- resource development, including guidelines and tools
- information sharing through our website, e-newsletter, blog articles and forums.

Our deliverables

Table 6.1 Water Sensitive SA deliverables

Outcome/output	Activities
Program Business Planning	
Outcome 1 – Accountability and reporting	
Outcome 1a – Transparency and accountability in business and operational planning and reporting	1.1. Prepare 3-year business plan (review annually).
	1.2. Executive support to Water Sensitive SA Steering Committee
	1.3. Program performance and financial management reporting
Stakeholder engagement	
Outcome 2 – Inclusivity	
Outcome 2a All relevant practitioners and industry groups are engaged in Water Sensitive SA program development and program delivery.	2.1. Deliver a government and industry campaign seeking the SA WSUD policy adoption within planning policy and the building code, though professional networks and industry associations.
	2.2. Present to industry forums/seminars to raise awareness of the case WSUD and the mechanisms and opportunities for transition to a water sensitive community
Outcome 3 – Recognised value of program	
Outcome 3a Financial partners understand the value of their investment and agree the program meets industry needs.	3.1. Involve our partners in the development of our business and operational plans.
WSUD policy adoption	
Outcome 4 – Adoption of WSUD performance targets	
Adoption of existing SA WSUD Policy performance targets for water conservation, stormwater runoff quality and stormwater will drive a consistent, equitable approach to WSUD, based upon best practice.	4.1. Promote the SA WSUD Policy and seek community and industry wide support for their adoption

Outcome/output	Activities	
	4.2.	Review and update the SA Planning Policy Library (SAPPL) to develop a suite of objectives and performance-based planning provisions for green infrastructure and WSUD to inform the drafting of the *Planning and Design Code, Standards and Guidelines*.
Resources development		
Outcome 5 – Technical resources for WSUD projects		
Outcome 5a Resources to support planning, design, construction and maintenance of WSUD elements are readily available through a central on-line facility Outcome 5b Practitioners have the guidelines necessary to inform planning, design, construction and maintenance of WSUD assets.	5.1.	Provide a central hub (Water Sensitive SA website) for WSUD resources and information.
	5.2.	Develop case studies to share the stories and learnings from successful WSUD projects across a range of scales and project types
	5.3.	Coordinate practitioner input into project scoping and implementation for the development of a deemed to satisfy guideline to inform the proposed Planning & Design Code (under the *Planning, Development and Infrastructure Act 2016*) – Priority Project #3
	5.4.	Coordinate practitioner input into project scoping and implementation for the develop an online tool for stormwater design and assessment of simple/small scale developments – Priority Project #4
	5.5.	Coordinate practitioner input into the scoping and implementation of a life cycle cost analysis for a range of WSUD element types for capital works and retrofit projects, and across a range of scales of development types – Priority Project #2
	5.6.	Coordinate practitioner input into the development of MUSIC for South Australia.
	5.7.	Coordinate practitioner input into the review and update of WSUD technical guidelines for SA – Priority Project #6
Training and community of practice		
Outcome 6 – A proficient WSUD practitioner community		
Outcome 6a: Practitioners can deliver best practice integrated water management and WSUD into the planning, design, construction and maintenance of WSUD assets.	6.1.	Prepare a training and community of practice plan to address knowledge and skills gaps
	6.2.	Procure training providers and coordinate delivery of training to address the needs of planning, detailed design, construction and maintenance of WSUD assets.
	6.3.	Liaise with existing training providers that service our target stakeholder groups to seek amendments to existing courses to better integrate WSUD into the curriculum (e.g. surveyors, plumbers etc.)

Outcome/output	Activities	
Outcome 6b: WSUD practitioners are well networked through peer to peer learning opportunities	6.4.	Source presenters for seminar series, host and facilitate workshops to establish a community of practice, fostering peer to peer learnings
	6.5.	Deliver training to practitioners and community, from Water Sensitive SA resources.
Communications		
Outcome 7 – An informed WSUD practitioner community, together with broader public		
Outcome 7a Increased awareness of best practice, WSUD strategy, policy, techniques and applications. Outcome 7b Increased trust in WSUD to deliver multiple benefits to the community, environment and economy	7.1.	Deliver a community campaign through mainstream media, and social media to raise awareness of the benefits of WSUD as an integral component of our urban landscape and the risks of no action and enable active participation of citizens.
	7.2.	Develop a Water Sensitive SA award to promote the successes of the industry – include categories for local government and developer (large scale and small scale)
	7.3.	Research and prepare bi-monthly e-newsletters to keep practitioners up to date with the latest research, policy, strategy and practice from both SA and interstate.
	7.4.	Moderate on-line forums to address emerging technical, strategy and policy challenges.
	7.5.	Source guest writers of blog articles to provide a more detailed insight into current research and practice
	7.6.	Moderate blog article on-line comment and discussions
	7.7.	Develop and actively manage a social media campaign via LinkedIn and Twitter
Research & adoption pathways		
Outcome 8 – Research integration with practitioners		
Outcome 8a – WSUD research is accessible to practitioners Outcome 8b – WSUD research addresses practitioners knowledge gaps	8.1.	Collaborate with researchers to make research outcomes more accessible to practitioners, clarifying potential adoption pathways
	8.2.	Collaborate with researchers, practitioners and other interstate capacity building programs to initiate new research to address knowledge gaps.

Training and community of practice

Building the knowledge and skills base of South Australian WSUD practitioners is one of the primary objectives of Water Sensitive SA. Implementation of the training program and seminar series shown in Table 6.2 aims to develop a common understanding of the challenges and solutions associated with the planning, design, construction and maintenance of WSUD elements. This will provide a more consistent approach to WSUD and support the industry performance against best practice standards.

The seminar and workshop series will provide an opportunity for access to latest research and peer-to-peer learning of WSUD practice that has worked well and the challenges and learnings along the way to establish a community of practice for SA.

Table 6.2 2017-18 Indicative training and seminar series schedule

Date		Training/ Seminar	Topic
October	2017	Training	Maintenance of WSUD Assets
November	2017	Seminar	WSUD and micro climate benefits – theory and practice (V)
December	2017	Seminar	CRCWSC Tools and products adoption workshop
February	2018	Training	Online stormwater assessment Tool for small-scale development (V)
March	2018	Training	WSUD for policy planners and development assessment planners and engineers
April	2018	Training	Design of green roofs and walls
May	2018	Seminar	Getting balance back into the urban water cycle - Street scale infiltration solutions (V)
May	2018	Training	Construction of WSUD Assets
June	2018	Seminar	Stormwater Management Planning Guidelines: How to apply them

(V) denotes event will be recorded on video and place on Water Sensitive SA YouTube channel.
Note: Indicative program – may be subject to change dependent upon service provider availability and demand.

7. Budget estimates

7.1. Income

Income for the completion of the priority projects has been carried over from the 2016-17 budget to the value of $88,000. Of this, $22,000 is set aside for Priority Projects 1 and 2 Cost-benefit analysis framework and tool; and $66,000 is allocated to Priority Projects 3 and 4 for the Deemed to satisfy guideline and Online stormwater assessment tool for small-scale development.

The budget estimates provided in Table 7.1 are based upon confirmed contributions from the partners and is subject to the execution of formal grant agreements between the AMLR NRM Board and the relevant partners.

2017-18 income summary

Table 7.1 Projected income 2017-18

	Income (as per grant agreement) per financial year (+ GST)		
Funding partner	2016-17 carry over	2017-18	Total
Adelaide and Mount Lofty Ranges NRM Board		100,000	
City of Burnside		5,000	
City of Charles Sturt		5,000	
City of Marion		5,000	
City of Mitcham		5,000	
Rural City of Murray Bridge		5,000	
City of Onkaparinga		10,000	
City of Playford		5,000	
City of Port Adelaide Enfield		5,000	
City of Salisbury		10,000	
City of Tea Tree Gully		5,000	
City of Unley		3,000	
City of Walkerville		1,500	
SA Water		5,000	
DEWNR, Green Infrastructure Program		20,000	
CRC WSC		30,000	
Carryover 2016-17	88,000		
Total	$88,000	$219,500	$307,500

Note: All income nominated above is subject to the execution of grant agreements between the partner organisations and the AMLR NRM Board.

New investment tied to specific outcomes

DEWNR, Green Infrastructure Program funds of $20,000 are committed for the development of performance-based planning provisions and assessment tool for green infrastructure and WSUD.

CRC for Water Sensitive Cities funds of $30,000 are committed for SA Regional Manager functions to advance research adoption pathways and engage SA practitioners in the Tranche 2 research program.

7.2. Expenditure

Budget estimates have been prepared based upon the current level of investment as detailed below in Table 7.2, with total expenditure for 2017-18 expected to be $297,500.

2017-18 budget estimates

Table 7.2 Program budget estimates within current committed funds

Deliverable	Expenditure (+ GST)		
	2016-17 carry over $	2017-18 $	Total $
Program management		18,000	18,000
Stakeholder engagement		9,000	9,000
Research and adoption pathways		41,000	41,000
Technical resources development		37,000	37,000
Training and community of practice		40,000	40,000
Communications		20,000	20,000
Sub-total 1		**165,000**	**165,000**
Part B: Priority projects			
1. Case for WSUD – cost benefits analysis	22,000	4,000	26,000
2. Lifecycle cost analysis			
3. Deemed to comply guideline – urban design code	15,000		15,000
4. Online tool for simple/small-scale developments	51,000	12,000	63,000
5. MUSIC (stormwater quality model) Guidelines for SA			
6. Technical guidelines review and update/adapt – SA and interstate			
7. Green Infrastructure and WSUD planning policy review		38,000	38,000
Sub-total 2	**88,000**	**54,000**	**142,000**
Total	**$88,000**	**$219,000**	**$307,000**

8. Evaluation framework

8.1. Measures of success of 3-year program

The achievement of the following high-level goals will demonstrate that the program has been effective in its engagement of a broad range of stakeholders, which has resulted in cultural and behavioural change:

1. WSUD performance based targets are embedded within the *Planning and Design Code, Standards and Guidelines* by policy framework for adoption is agreed by June 2019.
2. A close alliance has been established with the development industry HIA/UDIA such that the benefits of WSUD implementation are well understood and the industry, in collaboration with Water Sensitive SA, is working towards supporting its own members to increase their knowledge and practical application of WSUD.
3. Council/private practice – planners, landscape architects and engineers report an increased practical understanding of WSUD principles and practical application, relative to the baseline awareness and knowledge levels established by Alluvium Consulting and Kate Black Consulting (2012) and 3-Year Review 2017.
4. The program has secured funding from a mix of government (local, state and federal) and industry sources to ensure sustainability for another three to five years and beyond.

8.2. Program reporting and evaluation

To ensure the Water Sensitive SA capacity building program is constantly evolving to respond to the needs of its partners and broader practitioners, the method of evaluation will include:

- monthly reporting to DEWNR on program activities and financial statement
- three-monthly reporting to program Steering Committee on progress towards performance targets and financial statement
- annual evaluation of program outcomes to feed into the following year's business plan
- a detailed evaluation of the program's impact to date in the middle of year 6 (2019-20) of the program, against KPIs, including a survey to track progress – development in perceived knowledge and awareness for South Australian practitioners.

8.3. Key performance indicators

Performance indicators for key program activities and Water Sensitive SA team member responsibility will include:

Table 8.1 Program activity performance indicators

Outcome/output	KPI	Target
Program Business Planning		
Outcome 1 – Transparency and accountability in business and operational planning and reporting		
	1.1. Annual business plan prepared. Prepare 3 year business plan (review annually), stakeholder engagement plan and training plan.	May (preceding relevant financial year)
	1.2. # agenda papers prepared, meeting coordinated for Water Sensitive SA steering committee	4 per annum
	1.3. # of reports prepared – program performance against KPIs and financial management	4 per annum
	1.4. Overall program review undertaken	February 2020
Stakeholder engagement		
Outcome 2 – Inclusivity		
Outcome 2a All relevant practitioners and industry groups are engaged in Water Sensitive SA program development and program delivery.	1.5. # organisations and diversity of industry groups consulted.	100% metropolitan Adelaide Councils and key industry associations by July 2018 6 developers/ industry peak bodies consulted
	1.6. # of presentations made by Water Sensitive SA to industry forums/seminars	4 per annum

Outcome/output	KPI	Target
Outcome 3 – Recognised value of program		
Outcome 3a Financial partners understand the value of their investment and agree the program meets industry needs.	2.1. % of investment partners renewing partnership annually	90%
	2.2. # of new investment partners following release of business plan	3 additional Councils by July 2019 3 other organisations by July 2019
WSUD policy adoption and implementation		
Outcome 4 – Adoption of WSUD performance targets		
Outcome 4a Binding performance targets for water conservation, stormwater runoff quality and stormwater will drive a consistent, equitable approach to WSUD, based upon best practice	3.1. SA WSUD Policy, and WSUD and green infrastructure principles incorporated within *Planning and Design Code, Standards and Guidelines* 3.2. Commitment by DPTI (Planning) to integrated online stormwater assessment tool within e-planning system	by 30 June 2019 by 30 June 2019
Technical resources development		
Outcome 5 – Technical resources for WSUD projects		
Outcome 5a Agreement reached with interstate and international capacity builders for sharing technical information and which elements SA is to lead Outcome 5b Resources are readily available through a central on-line facility Outcome 5c Practitioners have the guidelines necessary to inform planning, design, construction and maintenance of WSUD assets.	3.3. Sources for all categories of technical information identified and links made on Water Sensitive SA website	Website hits per qtr >1600 by May 2017
	3.4. Contract(s) signed for provision of missing technical information for which Water Sensitive SA is to take lead	Stormwater assessment tool on-line by June 2018 Cost-benefit analysis framework online by June 2019
	3.5. Quality of SA-produced technical guidance is peer reviewed and assessed to be good	New material peer reviewed and approved
	3.6. Proportion of industry sectors (i.e. planning, design, assess, construct and maintain etc.) for which technical support resources are available on line	All sectors by 30 June 2018
	3.7. % of practitioners citing Water Sensitive SA website as a primary source of information on WSUD technical matters	80% by April 2020
	3.8. % of practitioners reporting resources to support their role in WSUD are available via Water Sensitive SA website.	80% by May 2020

Outcome/output	KPI	Target
Training and community of practice		
Outcome 6 – A proficient WSUD Practitioner community		
Outcome 6a: Practitioners can deliver best practice integrated water management and WSUD into the planning, design, construction and maintenance of WSUD assets.	4.1. % of practitioners reporting improved ability to delivery best practice WSUD	85%
	4.2. % of practitioners reporting they will apply the learnings in their current role	90%
	4.3. qualitative data on how practitioners will apply the learnings from training	n/a
	4.4. # of collaborations with industry groups/training providers to strengthen the WSUD content of existing courses	2 by June 2020
	4.5. # of full day equivalent courses delivered per annum for priority knowledge and skills gaps	3 per annum
	4.6. # of attendee days in training courses run by Water Sensitive SA	120 per annum
	4.7. % of course attendees reporting that training increased their knowledge of the topic in question.	90%
	4.8. % of course attendees reporting that course material and presenter were of a good standard or higher.	90%
	4.9. % of course attendees reporting the course was relevant to their current role.	95%
Outcome 6b: WSUD practitioners are well networked through peer to peer learning opportunities	4.10. # of seminar series held each year	4 per annum
	4.11. # of participants in seminars per annum	160 per annum
	4.12. % of seminar attendees reporting that training/seminar increased their knowledge of the topic in question	90%
	4.13. % of seminar attendees reporting that the presenter was of a good standard or higher	85%
	4.14. % of seminars attendees reporting the seminar was relevant to their current role	95%
	4.15. Qualitative data on how practitioners will apply the learnings from seminars	n/a
Communications		
Outcome 7 – Communications		
	4.16. # of media releases/media (radio) engagements	3 per year
	4.17. Sponsorship for awards event	1 every 2 years

Outcome/output	KPI	Target
Outcome 7a Increased awareness of best practice, WSUD strategy, policy, techniques and applications. Outcome 7b Increased trust in WSUD to deliver multiple benefits to the community, environment and economy	4.18. # of e-newsletter subscribers	750 subscribers by 30 June 2018
	4.19. Open rate of e-newsletter emails	30%
	4.20. Click rate from e-newsletters	15%
	4.21. # of forum conversations per annum	3 per annum
Research and adoption pathways		
Outcome 8 – Research integration with practitioners		
	1.1. # of potential research projects to address gaps identified by practitioners and communicated to researchers.	6 by 30June 2020
	1.2. # of WSUD research programs with clear adoption pathways for SA practitioners	6 by 30 June 2020
	1.3. # of CRCWSC Tranche 2 projects confirmed aligned with SA industry partner needs	3 by 30 June 2018

8.4. Reporting performance

Program management services are provided under a services agreement between Mellissa Bradley Consulting (Program Manager) in collaboration with Kreative Wisdom (Kathryn Bothe, Communications and Events Partner) and the AMLR NRM Board.

The contract commenced on 31 October 2014 and now expires on 31 December 2017, following a six-month extension. Between July and December 201, the Adelaide and Mt. Lofty NRM Board will be investigating options for program delivery services beyond 2017.

The Program Manager will provide a report to Steering Committee no later than May of each year detailing performance against program deliverables, including data of nominated indicators.

8.5. Program risk analysis

To ensure that risks to the quality of program deliverables and the overall longevity of the program are adequately managed, a risk analysis has been undertaken as provided in Table 8.2. Changes to the risk profile since the 3-year Business Plan 2014-15 to 2016-17 include:

- a reduction in the governance structure risk from moderate to low as the AMLR NRM Board has advised that the existing governance model will continue into the future, therefore there is no need for the expense and resources required for incorporation.
- A reduction in risk of low numbers at training events due to our reputation as a quality training provider and assistance from peak industry bodies to cross promote our training and events.

The likelihood, consequence and risk rating tables used in the risk analysis are provided in Tables 8.3 to 8.5.

Table 8.2 Program risk assessment

				"DO NOTHING"				RESIDUAL			
Risk #	Plan Component	Hazard	Hazardous event	Likelihood	Consequence	Risk	Description of control measures/actions	Likelihood	Consequence	Risk	Status/ comments as at June 2017
1.	Communications		Difficulty in reaching target audience	B	4	High	Seek to reach target audience through building or strengthening partnerships with existing industry networks and programs as detailed within Stakeholder Engagement Plan (e.g. AILA, PIA, AIA, Stormwater SA, ASBN, Water Industry Alliance, SA Hyd. Soc, AWA, HIA, Property Council)	D	3	Mod	Strong alliances have been developed with several industry associations. Further work required to connect with the development industry and master builders
2.	Communications		Program fails to meet needs of target audience	C	4	High	Evaluation processes must be built into every program activity to keep abreast of practitioner capacity needs and wants	D	2	Low	3-year review in April 2017 identified areas where program is performing well and areas for further effort, as reflected in the shift in emphasis for WSUD Policy, research adoption and stakeholder engagement program areas
3.	Communications		Program fails to attract suitable Program Champion	C	3	High	Develop a detailed prospectus to clearly define the expectations and support available for the role	D	3	Mod	Potential ambassadors identified. Pending narrative for WSUD and Green Infrastructure by DEWNR to be key to "induction kit" for proposed ambassadors.
4.	Investment		Security of ongoing funding	B	5	Ext	Build relationships with potential funders and ensure delivery of a quality program that will attract funding	C	4	High	3-year program review indicated investment partners very satisfied with program quality and direction. As at June 2017 majority of

				"DO NOTHING"				RESIDUAL			
Risk #	Plan Component	Hazard	Hazardous event	Likelihood	Consequence	Risk	Description of control measures/actions	Likelihood	Consequence	Risk	Status/ comments as at June 2017
											partners seeking to renew agreements
5.	Governance		Funding model can not sustain cost of incorporation and organisational establishment	B	4	High	AMLR NRM Board advised that existing governance model will continue into the future, i.e. no need for incorporation	D	2	Low	Risk has reduced from Mod to Low given the NRM Board's decision.
6.	Training		Response to training/events low	B	4	High	Work with industry peak bodies who now cross-promote our training and events. Quality core courses have now been developed, with some delivered more than once. Training and seminar series remains flexible to respond to current topical issues.	D	2	Low	Risk reduced – Mod to Low. Target number of attendees met, however, conscious decision made not to offer 4 x full day courses in 2017-18 as industry could not sustain this level of technical training in one year. Instead, have opted for mix of full-day and half-day courses for 2017-18
7.	Policy and guidelines		Change in state government policy priorities	C	3	High	Work with relevant stakeholders to ensure that WSUD remains relevant to the policy agendas across the political spectrum	C	2	Mod	Relationship developed with DEWNR Planning team and DPTI (Planning) managers responsible for *Planning and Design Code, Standards and Guidelines* DPTI (Planning) management support a Water Sensitive SA led review of planning policy for WSUD and green infrastructure
8.	Policy and guidelines		Development industry refusal to support WSUD	D	4	High	Upfront engagement via existing industry networks, e.g. UDIA,	E	3	Mod	Program will focus on demonstrating the case for WSUD cost/benefits and lifecycle analysis plus

				"DO NOTHING"				RESIDUAL			
Risk #	Plan Component	Hazard	Hazardous event	Likelihood	Consequence	Risk	Description of control measures/actions	Likelihood	Consequence	Risk	Status/ comments as at June 2017
			targets – voluntary or mandated				Property Council of Australia, and government agencies Workshop policy development				development of tools (deemed-to-comply guide and online tool) will directly involve UDIA, Property Council, etc. In 2017-18, case studies will focus on development rather than public realm projects.
9.	Policy and guidelines		Research to fill knowledge gaps not funded	C	4	High	Work with research institutions to undertake further research Advocate with government/other funding bodies	D	4	High	Partnership with CRCWSC to provide Regional Manager services, provides greater capacity to influence research.
10.	Human resources		Program Manager on extended unplanned leave	E	4	Mod	Systems for events and communications (e-newsletter) are well established. Trusted existing subcontractors would be drawn upon.	E	2	Low	Candidates have been identified to undertake Program Manager functions for extended unplanned leave.
11.	Human resources		Communications & Events Partner on extended unplanned leave	E	4	Mod	Entire program team will be trained in administration of new website. The website development consultants will provide web-admin services if required.	E	2	Low	Program team now experienced in administration of website. ARRIS can provide website support services if needed

Adapted from Alluvium Consulting & Kate Black Consulting (2012)

8.6. Risk rating tables

Table 8.3 Consequence rating – qualitative measures of consequence or impact

Rating	Descriptor	Explanation
1	Insignificant	Negligible financial loss 9< 5% of project budget). No real disruption to program. No injury or first aid only. No impact on morale. No media or political attention. Some local complaints. No breach of legislation. Minor instance of environmental damage. Can be reversed immediately. Interruption to an event – minimal impact to participants/store holders/others.
2	Minor	Minor financial loss ($200-500 or 5-10% of project budget). Minor financial disruption. Minor variation to budget. Minor medical attention. Negligible impact on morale. Some local media or political attention. Minor community concern. Below 5% of community affected. Minor breach of legislation. Minor impact to environment. Can be reversed in a short timeframe. Minor interruption to event with minor impact to participants/store holders/others.
3	Moderate	Moderate financial loss (10-25% of project budget). Moderate impact to program operations. Moderate variation to budget. Significant injury requiring medical attention. Short-term effect on morale. Significant media attention and public interest. Potential for adverse local media attention. 5-40% of community affected. Breach of legislation with penalties. Moderate impact to environment. Localised damage that has potential to spread and reversed with intensive efforts. Moderate interruption to event. Partial Event Emergency Plan action may be needed.
4	Significant	Major financial loss (25-50% of project budget). Major impact on program operations. Major variation to budget requiring additional funding for event and post-event investigations/actions. Serious long-term injury. Temporary disablement. Significant impact on morale and business. Significant adverse media coverage and public interest. Long-term effect on reputation. 40-70% of community affected. Multiple breaches of legislation with penalties. Severe loss of environmental amenity. Danger of continuing environmental damage. Major interruption to service delivery. Full or partial event emergency plan action may be needed.
5	Catastrophic	Significant financial loss (>50% of project budget). Ceasing program operation. Significant financial impact during and post event, major injury/disablement or death. Long-term effect on morale and future staging of the event. Adverse national media attention. Major embarrassment attention. Major breaches of legislation with maximum penalties. Major loss of environmental amenity – irrecoverable environmental damage. Full event emergency plan action required.

Table 8.4 Likelihood rating – qualitative measures of likelihood

Rating	Descriptor	Explanation
A	Almost certain	Expected to occur at times of normal operations (more than once per year), 95% chance
B	Likely	Will occur at some stage based on previous incidents or in most circumstances (1-2 years), 75-95% chance
C	Possible	Not expected to occur but could under specific circumstances. Might occur (2-5 years), 25-75% chance
D	Unlikely	Conceivable but not likely to occur under normal operations – has occurred at some time (5-10 years), 5-25% chance
E	Rare	Only occurs in exceptional circumstances (>10 years), <5% chance

Table 8.5 Risk rating – qualitative risk analysis matrix

Likelihood	Insignificant 1	Minor 2	Moderate 3	Significant 4	Catastrophic 5
A (Almost certain) 5	Moderate	High	High	Extreme	Extreme
B (Likely) 4	Moderate	Moderate	High	High	Extreme
C (Possible) 3	Low	Moderate	High	High	High
D (Unlikely) 2	Low	Low	Moderate	High	High
E (Rare) 1	Low	Low	Moderate	Moderate	High