# ACT WATER STRATEGY REPORT CARD FOR IMPLEMENTATION PLAN ONE (2014–18)

ACT Government

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# FOREWORD

It is my pleasure to present the ACT Water Strategy Implementation Plan Report Card (2014–18).

The ACT Water Strategy – Striking the Balance was released in August 2014. It marked a new approach to water management for the ACT Government as it emerged from the millennium drought and began to tackle broader threats to water resource management. This included additional consideration of water quality from land use change (mostly urban development) and a greater recognition of the interrelationships of community and better environmental management.

The ACT Water Strategy was accompanied by a five year implementation plan which will draw to a close at the end of 2018. The ACT Government has developed this report card to provide information to the community and stakeholders about the progress of the strategy so far, and to inform the stakeholder engagement processes which will be involved in developing Implementation Plan Two 2019–25 (IP2).

The report card shows very good progress with government having completed 27 of the 31 agreed milestones. Of the remainder, three milestones have been assessed as in progress but with completion dates early in IP2. One milestone is due for commencement in 2019 pending the outcome of a current study and will be carried forward into IP2.

The implementation of the ACT Water Strategy so far has resulted in a number of achievements, including:

> establishment of the ACT and Region Catchment Management Coordination Group as a statutory body, and the release of its Regional Catchment Strategy. The strategy was endorsed by the ACT Government, as well as the NSW and Australian Governments, Queanbeyan-Palerang, Snowy Monaro and Yass Valley Councils respectively, and Icon Water

- commencement of the ACT/Commonwealth funded Healthy Waterways project, which has so far delivered:
  - planning and investigations for at least 19 water quality infrastructure projects, establishment for 12 of which has already commenced as of June 30 2018
  - research into in-lake processes contributing to blue green algae
  - establishment of an integrated water quality monitoring program.
- "in principle agreement" to the establishment of interstate water trading between the ACT and NSW.
- establishment of the $H_2$OK Stormwater education program as the region's first cross-border catchment education program.
- continuation of the Waterwatch program which has seen the program grow to over 200 volunteers conducting over 2400 water surveys per annum in what is the only regional water quality/river health monitoring program.

This list is by no means comprehensive but provides a snapshot of what that can be achieved with a genuine "whole of government" approach and broader community partnerships.

I trust that you consider the progress of the ACT Water Strategy as favourably as I do and encourage all interested stakeholder to participate in the development of Implementation Plan Two.

**Ben Ponton**
**Director General**
Environment, Planning and Sustainable Development Directorate

# CONTEXT

From late 1996 to mid-2010, much of southern Australia experienced a prolonged period of dry conditions, known as the millennium drought. The drought had severe hydrological impacts with long-term drying of vegetation and the landscape plus a drawdown on available water resources.

The drought conditions and the 2003 bushfire, which resulted in the temporary loss of a major water supply catchment, placed significant additional pressure on water availability for the ACT. As a result "Think Water, Act Water" (TWAW) was developed as the ACT's strategy for securing long-term sustainable water resource management and was released in 2004.

The ACT was highly successful in responding to the climatic circumstances of the time.

Achievements of TWAW included increased security of water supply via major increases in storage capacity, access to additional water sources, and reductions to demands on water resources through increased efficiency of water use as a result of water sensitive urban design and permanent water conservation measures.

As south eastern Australia emerged from drought conditions, the Territory identified the need for a water strategy that considered environmental values, water quality and community connections as well as water use efficiency.

The ACT Water Strategy 2014-44: Striking the Balance was launched on 1 August 2014 with a vision of a community working together managing water wisely to support a vibrant, sustainable and thriving region. The strategy can be found at www.environment.act.gov.au/__data/assets/pdf_file/0019/621424/ACT-Water-Strategy-ACCESS.pdf.

The strategy is structured into three outcome areas to guide water management in the ACT over the next 30 years:

OUTCOME 1:
**Healthy catchments and waterbodies**

OUTCOME 2:
**A sustainable water supply used efficiently**

OUTCOME 3:
**A community that values and enjoys clean, healthy catchments and waterways**

Implementation Plan One 2014–18 (IP1) of the ACT Water Strategy (the Strategy) guides the delivery of the first stages of the Strategy as it addresses the changing needs of the Territory and region's water requirements and catchment management practices over the next 30 years. Understanding changing drivers and circumstances allows the Strategy to adapt to the variables of climate change, population growth and settlement patterns, and community priorities. IP1 can be found at www.environment.act.gov.au/__data/assets/pdf_file/0005/621473/ACT-Water-Strategy-IP-ACCESS.pdf.

# EXECUTIVE SUMMARY

IP1 identifies seven strategies to support the abovementioned outcomes. There are 31 milestones, comprising 18 actions and a further 13 sub-actions, to be delivered over the five year implementation plan. A summary of achievements is as follows:

- **27 milestones** have been completed or assessed as progressing as planned and to be completed prior to the finalisation of IP1.
- **3 milestones** assessed as in progress but scheduled to be concluded early in IP2.
- **1 milestone** is due for commencement in 2019 pending release of specific study results.

The status of the three milestones assessed and progressing with minor issues to be resolved is:

- **4:1 Develop an integrated water quality monitoring program**. Delivery of this milestone is slightly outside the timeframe of IP1 but in line with the Commonwealth Healthy Waterways funding agreement.
- **9:1 Develop a mapping system to identify overland flow paths and WSUD devices within the network.** This milestone was unfunded at the beginning of IP1; Transport Canberra and City Services Directorate has made considerable progress and is seeking to build on this through the term of IP2.
- **13.1 Undertake Inner North Stormwater Reticulation Network Trial and Evaluation.** Evaluation is underway and will continue over a five year period, due for completion in 2020. This milestone will be rolled into IP2 for finalisation.

The milestone due for commencement is **10:3 – Review planning codes relating to flood protection…** This will commence during IP2 once the catchment flood studies for the eight major catchments in Canberra are released in the last quarter of 2018.

# PROGRESS SNAPSHOT

## OUTCOME 1: HEALTHY CATCHMENTS AND WATERBODIES

Target: The ACT will maintain or improve the quality of water across all sub-catchments within the ACT.

Strategy 1:
Achieve integrated catchment management across the ACT and region

Strategy 2:
Protect and restore aquatic ecosystems in urban and non-urban areas region

Strategy 3:
Manage stormwater and flooding region

## Key achievements

> Establishment and delivery of the Healthy Waterways project, a joint $93.5 million initiative of the ACT and Australian governments to improve the quality of water entering our lakes and waterways and flowing downstream into the Murrumbidgee River system. The project includes the construction of infrastructure – such as wetlands, ponds and rain gardens – as well as research trials, a community education campaign and improvements to water monitoring practices.

> Establishment of the ACT and Region Catchment Management Coordination Group as a statutory body under amendments to the ACT Water Act in August 2015.

> Approval by ACT Government of the ACT and Region Catchment Management Strategy, and interjurisdictional endorsement of the strategy from key stakeholders.

> Release of Catchment Heath Indicator Program Reports for Waterwatch in 2014–15, 2015–16 and 2016–17; these are now an ongoing process. Waterwatch is a regional citizen science project that monitors the health of the regional waterways.

> Release of the draft Municipal Infrastructure Standards by Transport Canberra and City Services Directorate (TCCS) for review and comment. The previous ACT Government design standards for urban infrastructure required updating, with some standards released over twenty years ago.

> Completion by TCCS and Environment Planning and Sustainable Development Directorate (EPSDD) of a successful trial project for street sweeping optimisation. The pilot project is now informing a larger project which looks at the stormwater value capture, providing an opportunity to explore how the street sweeping program across Canberra can be optimised using current resources. This project is due to be completed in 2018.

> Review of the Environmental Flows Guidelines following a University of Canberra scientific review completed in 2017.

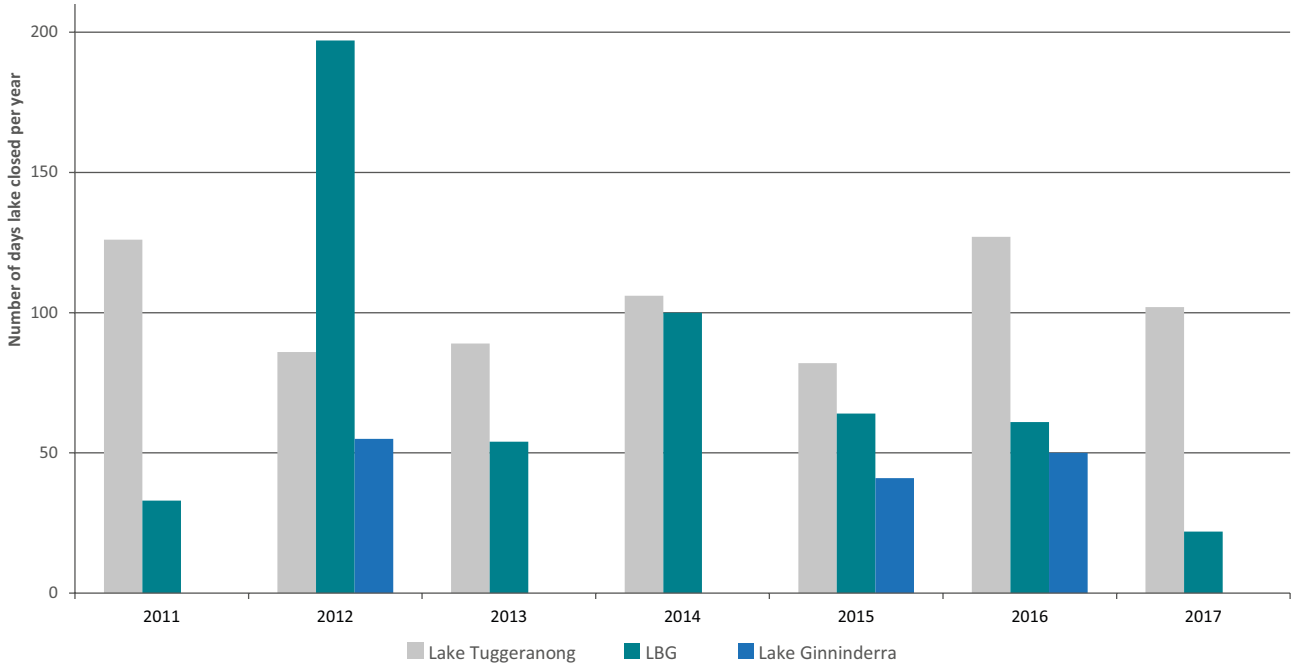
> Progress of liaison with industry groups and Councils through the H2OK Program, resulting in the delivery of training to assist the performance of the building and construction industry in erosion and sediment control.

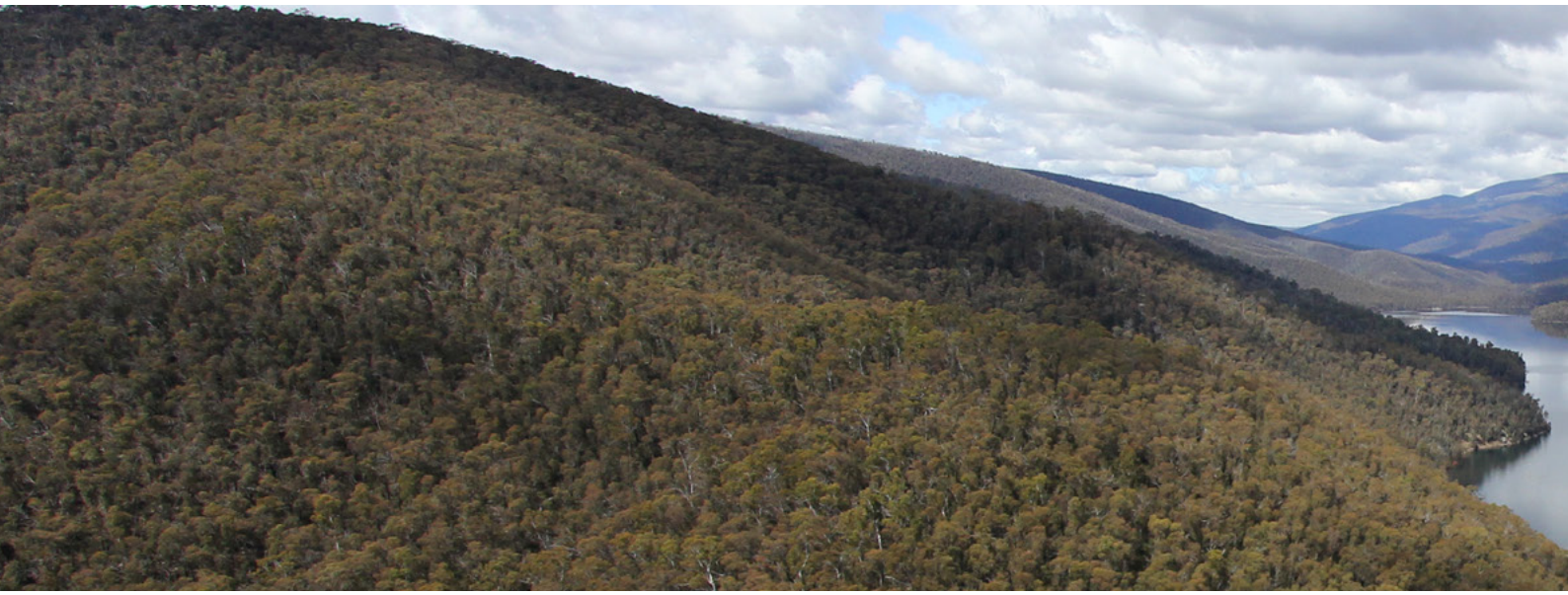
> Release of the draft variation of the Waterways: Water Sensitive Urban Design (WSUD) General Code for public comment. The Code is now supported with the ACT WSUD Practice Guidelines. This work allows for a refinement of stormwater targets (water quality and quantity) and a stronger integration of the water cycle into urban development.

> The Integrated Water Quality Monitoring Plan is complete and implementation has begun.

Figure 1 shows the high incidence of lake closures over recent years due to blue green algae outbreaks in Canberra's major urban lakes. This has been the driver for a major focus of the Strategy on water quality and the work of the ACT/Australian Government $93 million Healthy Waterways project

**FIGURE 1: ACT LAKE CLOSURES 2011–2017**





# OUTCOME 2: A SUSTAINABLE WATER SUPPLY USED EFFICIENTLY

## Target : Live within the Sustainable Diversion Limit set for the ACT

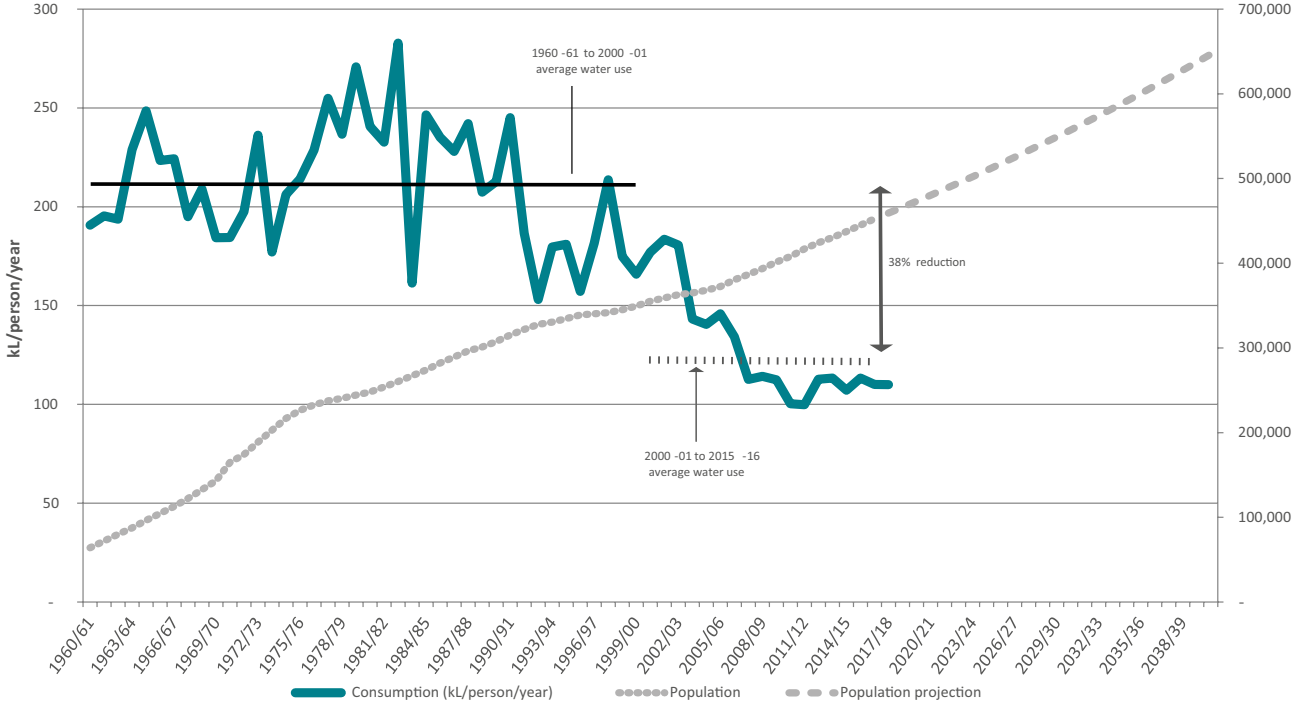
### Strategy 4:
### Secure long term water supplies

### Strategy 5:
### Manage and promote water services efficiently and sustainably

### Key achievements

> "In principle agreement" between ACT and NSW Ministers to the establishment of interstate water trading between the ACT and NSW, following the Murray Darling Basin Ministerial Council meeting on 16 June 2017.

**FIGURE 2 : ACT/QUEANBEYAN CONSUMPTION (KL/PERSON/YEAR)**



> A National Performance Report by the Bureau of Meteorology (BOM) showed that Icon Water has consistently performed well against agreed indicators.

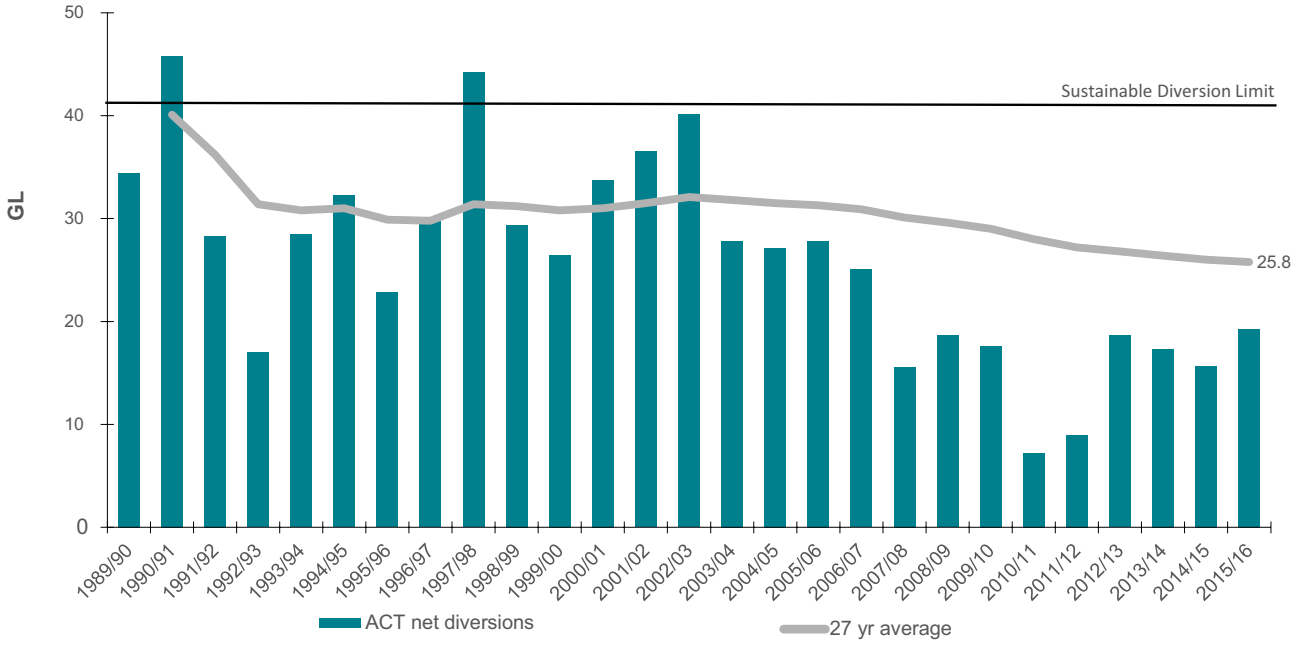
> Delivery of a range of educational programs for ACT residents, schools and businesses to deliver positive environmental outcomes led by Actsmart, including:

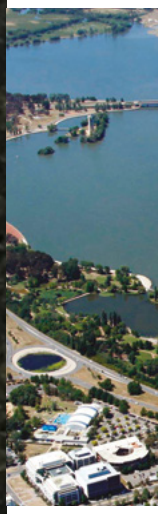
- energy and water assessments with tailored action plans and rebates for small businesses
- advice on water efficiency at public events, and free water assessment resources, tools and support to help schools manage water sustainably programs.
- support for low income households including assessments, appliance replacement and retrofits (water component ceased in October 2015).
- web tools promoting water-efficiency including the Carbon Challenge and, the WaterRight Garden program.

Figure 2 shows how the consumption per capita water use has been reduced by greater than 25% based on 2003 benchmark levels.

Figure 3 shows the ACTs Murray Darling Basin Sustainable Diversion Limit (SDL) (the amount of water able to be extracted under the Murray Darling Basin Agreement) and the ACT's net annual water diversions.

**FIGURE 3 :ACT NET WATER DIVERSIONS 1989-90 TO 2015-16**





# OUTCOME 3: A COMMUNITY THAT VALUES AND ENJOYS CLEAN, HEALTHY CATCHMENTS AND WATERWAYS.

**Target: Increased community understanding and participation in managing and improving waterways in the ACT and region.**

## Strategy 6:
## Provide clean and safe water for the ACT

## Strategy 7:
## Engage the community on understanding and contributing to a more sustainable city

### Key Achievements.

> The University of Canberra was engaged to conduct the Social Expectations of Water Use and Water Use Behaviour in the ACT and Region survey, which explored attitudes, values and behaviours of residents of the ACT and nearby NSW Local Government Areas regarding their use of waterways. The survey was carried out in mid-2015, and approximately 4500 valid surveys were received from residents living within the study region. Poor water quality in lakes was perceived as one of the top three environmental issues in the ACT and region. Most residents support improving stormwater infrastructure using the principles of WSUD as well as well-targeted community education campaigns.

> Establishment of the H2OK Stormwater education program as the first cross border catchment education program, as a result of the above-mentioned survey.

> Continuation of the Waterwatch program has seen the program grow to over 200 volunteers conducting over 2400 water surveys per annum in what is the only existing water quality/river health monitoring program in the Upper Murrumbidgee. The University of Canberra completed a review of data collection and management processes resulting in increased confidence and uptake of the program's outcomes in State of the Environment reports and other policy and planning processes. Waterwatch also conducts engagement programs to increase knowledge and awareness of native fish, surveys during platypus week, and the impact of feral pests on our riverine ecosystem (e.g. Feral Fish Scan and Carp Love 20 Degrees).

> Since 2014 EPSDD has undertaken a program of engagement with the Indigenous Nations of the ACT and region, particularly the Ngunnawal nation. This forms part of the development of the ACT's Water Resource Plan under the Basin Plan implementation, and also under the National Water Initiative. A major component of water resource planning is the identification of water values and uses by the ACT's Indigenous Nations. The Directorate has undertaken a number of workshops and meetings to develop Indigenous water resource objectives and outcomes for the identification process.

# ACT WATER STRATEGY 2014-44: STRIKING THE BALANCE REPORT CARD

As previously explained, IP1 identifies seven strategies to support the abovementioned outcomes. There are 31 milestones, comprising 18 actions and a further 13 sub-actions, aligned with the strategies, to be delivered over the five year implementation plan.

Progress on each milestone is monitored by the Directors–General Water Group (DGWG) which has representation from the Directors-General of the EPSDD (Chair), Chief Minister, Treasury and Economic Development, Health, and TCCS Directorates; the Commissioner for the Emergency Service Agency; and the Managing Director of Icon Water.

DGWG was established to oversee and direct the continuing consideration of water related issues across ACT Government with an emphasis on water quality and catchment management issues, and to promote coordination and cooperation on water planning and water management across Directorates.

IP1 progress is reported to the DGWG in a "traffic light dashboard" format as a standing agenda item. Summary of progress is as follows

## REPORTING KEY

✓ Completed

●●● On Track

●●○ In Development

●○○ Behind Schedule

# OUTCOME 1: HEALTHY CATCHMENTS AND WATERBODIES

## Target 1: The ACT will maintain or improve the quality of water across all sub-catchments within the ACT.

### Strategy 1: Achieve integrated catchment management across the ACT and region

| Actions and Milestones | Progress against Milestones and Status |
|---|---|
| **Action 1: Strengthen coordination and collaboration for catchment management across the ACT and region** | |
| 1.1<br>Establish new catchment management arrangements and mechanisms for stronger cross-border collaboration (ongoing). | ✓ Completed<br>The ACT and Region Catchment Coordination Group was established as a statutory advisory body in August 2015.<br>The Coordination Group advises the Minister on water catchment management, and consists of members from the Australian Government, ACT Government, Icon Water, NSW Government and local NSW regional councils and the community. |
| **Action 2: Enhance knowledge and spatial planning for water and catchment management** | |
| 2.1<br>Develop an integrated catchment management (ICM) plan for the ACT and surrounding upstream catchments to guide land and water management for protection of water quality and water supply. | ●●● On Track<br>The Coordination Group produced the ACT and Region Catchment Strategy which guides its work. Actions are aimed at developing collaborative relationships, sharing information and knowledge and aligning relevant legislation, policies and plans.<br>This strategy was endorsed by the ACT Government on 1 August 2016. Interjurisdictional endorsement was also received from the Australian Government, NSW Government and the local government areas of Queanbeyan-Palerang Regional Council, Snowy Monaro Regional Council and Yass Valley Council. |

| Actions and Milestones | Progress against Milestones and Status |
|---|---|
| 2.2<br>Fill critical gaps in catchment knowledge and better integrate land, water and biodiversity data<br>Further development of tools such as the Waterwatch Catchment Health Indicator Program (CHIP). | ✔ Completed<br>The Waterwatch Catchment Heath Indicator Program Reports for 2014–15, 2015–16, 2016-17 have been released and are available on the Waterwatch website: www.act.waterwatch.org.au/chip.html |
| 2.3<br>Develop the water component of an ACT spatial planning framework for natural resource management to inform management of land, water and biodiversity drawing on soil and vegetation mapping and Hydrogeological Landscape Framework, and the NARClim (NSW/ACT Regional Climate Modelling) project | ✔ Completed<br>The Hydrogeological Landscape Framework is complete and the final report is available: http://reports.envcomm.act.gov.au/actsoe2015/case-study/5-2/index.html<br>The NSW/ACT Regional Climate Modelling project is complete and an ACT climate change snapshot report is available on the EPSDD website: www.climatechange.environment.nsw.gov.au//Climate-projections-for-NSW/About-NARCliM<br>Icon Water have developed a Source Water Assessment Monitoring Plan (SWAMP) to cover the ACT's water supply catchments. |
| 2.4<br>Undertake management planning with clear water management objectives (water quality and recreational use):<br>A: Finalise Jerrabomberra Wetlands Master Plan (2014)<br>B: Finalise Googong Foreshores Plan of Management (2014)<br>C: Commence review of Canberra Urban Lakes and Ponds Plan of Management (2015)<br>D: Complete Lower Molonglo River Corridor Statutory Plan of Management (2015)<br>E: Commence preparation of a Lower Cotter Catchment Plan of Management (2014)<br>F: Update ACT Aquatic Species and Riparian Zone Conservation Strategy (2016-19)<br>G: Complete the ACT Sphagnum Bogs and Fens Management Plan (2015) | ●●● On Track<br>A: The Jerrabomberra Wetlands Concept Plan has been agreed to by the Parks and Conservation Service and the Woodlands and Wetlands Trust. It is to be presented to government for endorsement in the third quarter of 2019.<br>B: A Plan of Management for the Googong Foreshores was released in 2016.<br>C: EPSDD Environment Protection Policy has completed the review of Canberra Urban Lakes and Ponds Plan of Management (2015) and it will be available out for public consultation in the third quarter of 2018.<br>D: The Molonglo River Reserve is a new reserve which will aggregate two current reserves, Lower Molonglo River Corridor Nature Reserve and Kama Nature Reserve and will add additional land surrounding the new urban areas of the Molonglo Valley. The draft plan was released for public comment on 8 February 2018.<br>E: The Lower Cotter Catchment Reserve Management Plan 2018 is now complete. The plan was tabled as a disallowable instrument in the Legislative Assembly on 20 February 2018.<br>F: The ACT Government completed a review of *Action Plan 29 ACT Aquatic Species and Riparian Zone Conservation Strategy* in 2017, in consultation with the Scientific Committee. *A Draft ACT Aquatic and Riparian Conservation Strategy* was released for public consultation by the Conservator of Flora and Fauna in 2018 and the strategy will be finalised in 2018. Action Plans for the following species are included in the Strategy:<br>• Tuggeranong Lignum (*Muehlenbeckia tuggeranong)*<br>• Two-spined Blackfish (*Gadopsis bispinosus)*<br>• Trout Cod (*Maccullochella macquariensis)*<br>• Macquarie Perch (*Macquaria australasica)*<br>• Silver Perch (*Bidyanus bidyanus)*<br>• Murray River Crayfish (*Euastacus rmatus)*<br>• Murrumbidgee Bossiaea (*Bossiaea grayii)*<br>G: A draft ACT Sphagnum Bogs and Fens Management Plan was completed in 2015. Subsequently, a new statutory management plan for the Ginini Flats Ramsar wetland site (which consists of mostly Sphagnum bogs and fens) has been completed. The listing of the ACT sphagnum bogs and fens as a threatened ecological community is now being investigated. |

| Actions and Milestones | Progress against Milestones and Status |
|---|---|
| **Action 3: Integrate water cycle management and green infrastructure into the planning and design of urban environments** | |
| 3.1<br>Progress integration of water cycle management and green infrastructure into Canberra's urban design by;<br>A: finalising the review of the Waterways: WSUD Code and related documents in the Territory Plan<br>B: review design standards for WSUD infrastructure.<br>C: Incorporating planning approaches that enhance the ability of vegetation and water bodies to ameliorate the impacts of climate change in urban areas. | ●●● On Track<br>A: A draft variation of the Waterways: WSUD Code (DV354) was prepared and circulated to directorates for two internal consultations. DV354 is supported by a draft ACT WSUD Practice Guideline (module 1 and 2). The draft variation including the draft guideline was also workshopped with industry. DV354 will undergo a second round of public consultation which is expected to commence in July 2018.<br>B: The review of the Municipal Infrastructure Standards (MIS) has been undertaken with the drafts available online. www.tccs.act.gov.au/Development_and_Project_Support/standards-codes-and-guidelines/municipal_infrastructure_design_standards<br>• A further review of the MIS08 – Stormwater has been undertaken to include a water quality infrastructure component.<br>• Municipal Infrastructure Technical Specifications have been developed to provide better clarity around contractual agreements.<br>C: The Living Infrastructure Information Paper was released in February 2018. The Living Infrastructure Plan will be released in late 2018. |
| **Action 4: Improve water monitoring and analysis across the ACT and region** | |
| 4.1<br>Develop an integrated and coordinated water monitoring program, including:<br>A: development a water quality monitoring, management framework<br>B: review of data collection points and methods, including monitoring of existing infrastructure for performance e.g. ponds and wetlands<br>C: identification of priority gaps in monitoring and undertake additional monitoring<br>D: identify new hydrologic and water quality technology<br>E: improve access to water monitoring data to key stakeholders | ●●○ In Development<br>A: The establishment of the Aquatic Monitoring Advisory Group (AMAG) provides a forum for advising and co-ordinating monitoring activities in the ACT between key stakeholders. The Group was established by June 2018.<br>B: The Integrated Water Monitoring Plan (IWMP) was completed in December 2017. This presented an extensive review of monitoring activities in the ACT.<br>C: The IWMP proposed monitoring activities to fill identified gaps. Monitoring contracts to go to market for competitive tendering in mid-2018.<br>D: Opportunities to implement automated water quality sampling technology were incorporated into current tenders going to market. Further exploration to be undertaken post June 2018.<br>E: The ACT Healthy Waterways team is currently developing a data management system in line with the ACT Government Digital Strategy. Exploring the use of Data Lake as a repository and access point for water related data and information in the ACT. |

## Strategy 2: Protect and restore aquatic ecosystems in urban and non urban areas

| Actions and Milestones | Progress against Milestones and Status |
|---|---|
| **Action 5: Improve water quality and ecosystem health in the ACT and Region's rivers, lakes, aquifers, ponds and wetlands.** | |
| 5.1<br>Undertake restoration activities including:<br>A: key actions from the Upper Murrumbidgee Demonstration Reach (UMDR) Implementation Plan<br>B: the One Million Trees program in the Murrumbidgee River corridor (2018).<br>C: fish stocking to improve diversity and fitness of species<br>D: key actions from the Actions for Clean Water (ACWA) Plan.<br>E: pending outcomes from phase one of the Basin Priority Project, deliver infrastructure to improve water quality in the six priority catchments by June 2019. | On Track<br>A: The UMDR aims to develop a 10 year management plan for the conservation of aquatic communities in the upper Murrumbidgee catchment, with a focus on native fish. The process will be finished in late 2018. An Engineered Log Jam project funded by ACT Government to the value of $350K is to be implemented by June 2018, technical design is complete.<br>B: 18.5 km of willows were treated to enhance riparian corridors connecting the Bredbo/Colinton and Colinton/Gigerline Gorges. 38ha were treated for blackberries, and 13,500 trees planted to improve riparian connectivity over 40ha. Four erosion sites were stabilised and five kilometres of fencing installed and to exclude riparian grazing via landholder management agreements. 750 treess were planted to restore riparian habitat at a Trout Cod stocking site.<br>C: The ACT Government allocates $15k pa for fish stocking in ACT urban lakes. Since 1994–95 there have been approximately 2.2 million Murray Cod and Golden Perch fingerlings stocked at an average of 88,000 pa.<br>D: Key actions from the Actions for Clean Water Plan have been completed.<br>E: Through Healthy Waterways, implementation of a recommended 19 water quality assets commenced in 2017 and is planned to be completed by mid-2019. |
| 5.2<br>Undertake research and trials for improving water quality and ecosystems, including<br>A: trial in-lake interventions such as macrophyte beds and removal of Gambusia (mosquito fish) in wetlands<br>B: review effectiveness of structures including changes to the river geomorphic profile caused by Tharwa Fish Habitat structures and<br>C: Carp control projects | On Track<br>A: In-lake research and investigations commenced in the second quarter of 2017 and will be completed by 2019.<br>B: Structures are monitored for effectiveness by the Conservation Research Branch (CRB) in EPSDD in terms of geomorphology and habitat provision. Current monitoring is suggesting that the structures are performing to a very satisfactory standard.<br>C: A number of carp control projects have been implemented including:<br>• Carp Love 20 Degrees – a citizen science program run by Waterwatch to identify breeding areas for carp.<br>• CRB worked in conjunction with the Healthy Waterways team and community volunteers to drain Isabella Weir and Upper Stranger Pond to determine the biomass of carp in that water body and their rate of return. This will provide valuable information for the estimation of carp numbers in the ACT to be considered for the release of carp herpes virus (CHVN).<br>• Preparation is underway for the release of CHNV. CRB are leading the ACT's response planning for CHNV which will be considered in 2019. Funding for a carp control officer to oversee this work was announced in the 2018 ACT Budget. |
| **Action 6: Ensure appropriate management (volume, timing and quality) of environmental flows** | |
| 6.1<br>Explore opportunities for improved management of environmental flows, including in-stream and riparian health. | On Track<br>A project to undertake a scientific review of environmental flows was contracted to the University of Canberra. The revised draft flow guidelines were prepared in 2017. Community consultation was undertaken in early 2018. |

| Actions and Milestones | Progress against Milestones and Status |
|---|---|
| **Action 7: Strengthen compliance and enforcement for water resource management** | |
| 7.1<br>Enhance regulatory functions including<br>A: implementing ACT water offence provisions consistent with National Framework for Compliance and Enforcement Systems for Water Resource Management (2016).<br>B: updating environment protection guidelines for construction and land development in the ACT (2014)<br>C: updating environment protection guidelines for rural lease holders including water quality protection requirements in Land Management Agreements. | On Track<br>A: Amendments to offence provisions were notified on21 August 2015.<br>B: Guidelines to be released for public consultation in the third quarter of 2018.<br>C: Guidelines were updated in 2016<br>www.legislation.act.gov.au/af/2016-26/current/pdf/2016-26.pdf |
| 7.2<br>Complete a review of the *Environment Protection Act 1997* to strengthen enforcement provisions within the Act and to enable considerations of both actual and potential environmental harm (2014). | On Track<br>Legislative amendments competed as required.<br>www.legislation.act.gov.au/a/1997-92/default.asp |

## Strategy 3: Manage stormwater and flooding

| Actions and Milestones | Progress against Milestones and Status |
|---|---|
| **Action 8: Manage stormwater infrastructure sustainability** | |
| 8.1<br>Develop management and funding models for stormwater infrastructure that ensure whole of life performance | ●●● On Track<br>ACT Government has considered proposals from a specially-commissioned report. These included consideration of a cost reflective levy for stormwater management, and a number of management models such as the establishment of a stormwater utility within government or transfer of stormwater management activities to Icon Water. Government has requested more detailed analyses of the various options.<br>A stormwater audit has been undertaken and formed part of the business plan for the Healthy Waterways program. |
| **Action 9: Improve planning, monitoring and compliance for stormwater management** | |
| 9.1<br>Develop a strategic asset management plan (subject to resourcing) for stormwater infrastructure (2015), including a mapping system to identify overland flow paths and WSUD devices within the network. | ●●○ In Development<br>TCCS continually updates their Strategic Asset Management Plan (SAMP).<br>The SAMP is an internal document and the most recent update integrated WSUD assets into the stormwater assets chapter. It also looks at addressing the stormwater infrastructure database from a lifecycle perspective and identifying the resourcing and funding gaps.<br>Mapping of overland flows has commenced, however requires additional effort to bring this investigation to a useful outcome. |
| 9.2<br>Monitor, assess and actively manage stormwater impacts and review asset performance and management. | ●●● On Track<br>TCCS employ Australian Laboratory Services to monitor all dams bimonthly in compliance with Dam Safety Committee requirements.<br>TCCS routinely monitor stormwater pipes for blockages that could compromise flows.<br>Gross Pollutant Traps are cleaned out once to twice a year, are monitored after each rainfall event of >25mm to determine their cleaning requirements. |
| **Action 10: Improve planning, information and regulation for flood management** | |
| 10.1<br>Undertake studies and release information on flood risk including Sullivan's Creek, Yarralumla Creek, Long Gully Creek, Weston Creek, Woolshed Creek, Tuggeranong Creek, Isabella Weir, Ginninderra Creek systems or others if required. | ●●● On Track<br>Under funding from the National Disaster Resilience Program (NDRP), flood studies for the 8 catchments have undergone a significant peer review process.<br>Where required, data was updated and the models for each catchment were rerun to produce revised 1% Annual Exceedance Probability maps showing flood depth, extent and hazard.<br>Following their finalisation, the maps, will be released publically on ACTmapi during 2018.<br>The catchments revised were Sullivan's Creek, Yarralumla Creek, Jerrabomberra Creek, Weston Creek, Woolshed Creek, Tuggeranong Creek, Ginninderra Creek and Molonglo River. In conjunction with this, the Emergency Services Agency (ESA) will run a flood and storm safety education campaign (separately funded under NDRP), aligned with the release of the flood studies for a combined approach to flood risk management. |
| 10.2<br>Review existing plans and develop an ACT Flood Strategy, including assessment of future flood risks and infrastructure opportunities and pressures. | ●●● On Track<br>Funding was secured under the NDRP for this project. An ACT Flood Planning Committee and a Strategic Flood Risk Management Group was established to oversee the project.<br>A draft Strategic Flood Risk Management Plan was completed through a consultancy in late 2016. The ESA, through the Flood Planning Committee, continues to refine the draft. |
| 10.3<br>Review planning codes relating to flood protection, flood planning standards, floodplain protection, retardation and on-site detention. | ●○○ Behind Schedule<br>Work on the codes has not progressed as it is relying on the final outcomes of the flood map review and update (above). |

# OUTCOME 2: A SUSTAINABLE WATER SUPPLY USED EFFICIENTLY

## Target: Live within the Sustainable Diversion Limit (SDL) set for the ACT

### Strategy 4: Secure long term water supplies

| Actions and Milestones | Progress against Milestones and Status |
|---|---|
| **Action 11: Plan for long term water security** | |
| 11.1<br>Undertake future planning including:<br>A: continue to build capacity for long term planning using best available data, modelling and analysis, including climate change data, multiple models, and techniques for assessing options<br>B: review one year in 20 water restriction target planning principle as the basis for ACT water planning for water security (2015) | On Track<br>A: A source modelling tool was developed in 2017 using E-water's model platform. Icon Water has updated its water security and water demand modelling tools to include the new water security assets, increased water storage capacity, and incorporate climate prediction modelling. Icon Water is also developing a Googong Catchment Actions for Clean Water Plan in collaboration with Upper Murrumbidgee Catchment Network to identify and help direct natural resource management funding to erosion hotspots that are affecting drinking water quality.<br>B: A review has been completed by Icon Water. The water security position for the ACT more than adequately meets the one year in 20 water restriction target, with the temporary water restriction triggers not required until at or below 40% of total water supply capacity. Icon Water has some flexibility to supply water from a range of sources and selection is based on storage levels and the costs to operate different sources. |
| 11.2<br>A: Develop a water resource plan under the Murray Darling Basin Agreement (MDBA) including issues such as meeting the sustainable diversion limit requirements<br>B: a risk management plan<br>C: engaging with the indigenous community on water values | On Track<br>A: The submission of the ACT Water Resource Plan is on track for completion in 2018 (accreditation is expected by mid-2019). The current plan has been extended accordingly. The ACT is also preparing a long term environmental watering plan as required under the Basin Plan. This is largely based on the ACT's environmental flow guidelines.<br>B: A risk management plan has been prepared as part of the water resource plan. An Aboriginal waterways assessment project was undertaken in 2015 and renewed in 2016. This provides a basis for the determination of indigenous water values and uses as required in a water resource plan.<br>C: Murray Lower Darling Rivers Indigenous Nations group have been involved in this process and will be involved in the final assessment stage. |
| **Action 12: Strengthen water trading arrangements** | |
| Enable inter-state water trading that enhances the ACT's long term water security and investigate an internal ACT Water trading market.<br>A: Finalise interstate water trading arrangements to allow the transfer of water from Tantangara Dam to Googong Dam (2014)<br>B: finalise general interstate water trading arrangements and rules under the Murray Darling Basin Plan with the MDBA (2014)<br>C: Investigate the scope for an internal ACT water trading market in the medium to long term. | On Track<br>The Murray Darling Basin Ministerial Council met on 16 June 2017. ACT and NSW Ministers have reached "in principle agreement" to the establishment of interstate water trading between the ACT and NSW. The ACT will seek to align its Water Resource Plan and submission and accreditation time frame with the existing time frame for the NSW Murrumbidgee Plan (mid-2019).<br>A: Icon Water with Snowy Hydro Limited and the ACT and NSW governments finalised a commercial agreement and an intergovernmental agreement to enable Icon Water to transfer their water from the Murrumbidgee to Tantangara Dam, which can then be released to the ACT via the Murrumbidgee River.<br>B: The ACT is working with the Murray-Darling Basin Authority and NSW to develop the necessary trade arrangements for interstate water trading.<br>C: The decision was taken to focus on inter-jurisdictional water trading arrangements initially. The internal ACT water market is very small by comparison. |

| Actions and Milestones | Progress against Milestones and Status |
|---|---|
| **Action 13: Investigate the benefits and costs of more diverse water supply options** | |
| 13<br>Investigate the benefits (water quality and efficiency of water delivery) from local water supply systems, including undertake the Inner North Stormwater Reticulation Network Trial and Evaluation. | ●●○ In Development<br>Formal evaluation has commenced and will be completed by 2020 approximately coinciding with the expiry of the current licence exemption.<br>A draft Regulatory Plan has been submitted to the Technical Regulator, which is currently under review. Roads ACT is also in the process of developing an optimisation strategy for the Inner North Reticulation Network (INRN) operation and maintenance, which will include compliance and evaluation reporting.<br>TCCS is undertaking a procurement process for the servicing and maintenance of the assets, which will involve tendered services as well as in-house works. More information can be found at www.environment.act.gov.au/__data/assets/pdf_file/0008/714599/Sullivans-Creek-Inner-North-Reticulation-Network.pdf<br>Managed Aquifer Recharge research indicates large aquifer scale and high recharge/ extraction rates. |

## Strategy 5: Manage and promote water services efficiently and sustainably

| Actions and Milestones | Progress against Milestones and Status |
|---|---|
| **Action 14: Improve and monitor provision of water services** | |
| 14.1<br>Review agreed levels of service for water utilities in the ACT and monitor performance, consistent with principles agreed under the National Water Initiative. | ●●● On Track<br>The National Performance Report is undertaken annually by the Bureau of Meteorology (BOM). The report indicated that Icon Water has consistently performed well against agreed indicators. |
| **Action 15: Encourage water users to conserve and use water wisely** | |
| 15.1<br>Explore the effectiveness of water pricing in promoting water use efficiency. | ●●● On Track<br>In May 2018 the ICRC released its final decision and price direction for regulated water and sewerage service prices for the 2018-23 regulatory period. As a result of the decision, a typical Canberra household consuming 200kL per year will see a fall of about 3.5% ($42) in their annual bill.<br>The final decision allows for a small rebalancing of tariffs to better reflect Icon Water's underlying cost structure. This has the effect of increasing the supply charge (in real terms) by $20 each financial year, with offsetting changes occurring in volumetric charges. |
| 15.2<br>Improve efficiency of non-residential water use: Develop a water conservation scheme for non-residential water users in consultation with industry (2014). | ✔ Completed<br>A review of the Permanent Water Conservation Measures was undertaken by Icon Water and EPSDD. After this review Icon advised that it was not necessary to pursue this action. A decision was made in early 2017 not to pursue a conservation scheme for non-residential water users as this is already in the standard permanent water conservation measures. |
| 15.3<br>Deliver water efficiency programs and education to ACT residents, schools and businesses through Actsmart Programs. | ✔ Completed<br>Actsmart leads a range educational programs for ACT residents, schools and businesses to deliver positive environmental outcomes, including:<br>• energy and water assessments, tailored action plans and rebates for small businesses.<br>• advice on water efficiency for public events, including a 'Sustainable Events Guide' and free water assessments resources, tools and support to help schools manage water sustainably.<br>• support for low income households including assessments, appliance replacement and retrofits (water component ceased in October 2015).<br>• replacement of inefficient toilets to water-efficient toilets (pensioner concession card holders only from July 2014, program closed in September 2014).<br>• Web tools promoting water-efficiency including the Carbon Challenge and the WaterRight Garden program. |

# OUTCOME 3: A COMMUNITY THAT VALUES AND ENJOYS CLEAN, HEALTHY CATCHMENTS AND WATERWAYS.

## Target 3: Increased community understanding and participation in managing and improving waterways in the ACT and region.

### Strategy 6: Provide clean and safe water for the ACT

| Actions and Milestones | Progress against Milestones and Status |
|---|---|
| **Action 16: Improve management of rivers lakes and public space to promote recreational use and reduce risks to public health.** | |
| 16.1<br>Review the ACT Guidelines for Recreational Water Quality, taking into account the latest version of the NHMRC guidelines for managing risks in recreational waters. | ✔ Completed<br>Completed by Health Protection Service during 2014/15. The current version is available on the ACT Health website. This can be found at www.health.act.gov.au/public-information/public-health/recreational-water-quality |
| 16.2<br>Refine and develop new communication tools (Web, App etc) to provide public information and advice on water quality for recreational use to reduce risks to public health. | ✔ Completed<br>The Health Directorate provides advice to the EPA/TCCS/NCA on a weekly basis regarding water quality. EPA/TCCS/NCA own and manage the websites conveying this information to the public. |

## Strategy 7: Engage the community on understanding and contributing to a more sustainable city.

| Actions and Milestones | Progress against Milestones and Status |
|---|---|
| **Action 17: Promote community involvement in management of ACT water resources.** | |
| 17.1<br>Support community volunteering in assisting the management of ACT water resources, including on-ground activities, e.g. through grants and the provision of equipment and training | On Track<br>Three community based part-time Waterwatch coordinators have been funded. Icon Water supports the Waterwatch coordinator based at Cooma.<br>These four coordinators support over 200 volunteers with equipment and training to collect data on a variety of water quality indicators which help inform management as well as raise awareness on catchment health in the community.<br>Additional funding for on-ground works is also available from time to time through various ACT government grants. These are facilitated through organisations such as the three catchment groups and Greening Australia.<br>ACT Government funding for the three catchment groups was announced in the 2018 ACT Budget, and work will be done over 2018/19 to explore how the groups can further support this action. |
| 17.2<br>Public education, awareness raising and behavioural change campaigns on the role that individuals and businesses can play | On Track<br>A social expectations survey was undertaken by the University of Canberra, which is informing education campaigns. As a result, a regional Stormwater Education Program, known as the H2OK Program, was initiated. This program seeks to raise general community awareness of the management of our waterways.<br>Work with industry (e.g. the construction industry on erosion and sediment control) has also commenced to improve our capacity to mitigate the impacts of development on our waterways. www.environment.act.gov.au/water/ACT-Healthy-Waterways/h2ok |
| **Action 18: Ensure that indigenous and other cultural values are recognised in managing water planning and use.** | |
| 18.1<br>Increasing our understanding of community and cultural values of water by:<br>A: engaging with the Aboriginal community on their cultural values of water.<br>B: enhancing and sharing knowledge on the community values of water in the Upper Murrumbidgee region.<br>C: consulting with community on values associated with green infrastructure. | ✔ Completed<br>A: Extensive consultation has been undertaken as part of the Water Resource Plan. The challenge for the next phase of implementation is progressing from consultation to establishing an ongoing relationship with the traditional owners of the ACT and region on a range of water related policies and actions.<br>B: The Upper Murrumbidgee Catchment Network (UMCN) now have a seat on the ACT Regional Catchment Management Coordination Group and have been supported to run biannual conferences. Waterwatch is supporting community involvement and management of waterways. The ACT Government's H2OK program also commissioned the University of Canberra undertake a community values around water.<br>C: The Living Infrastructure Information Paper was released in February 2018. The Living Infrastructure Plan will be released in late 2018. |