Glamorgan Spring Bay Natural Resource Management Committee

Submission Summary

Goal 1 Sustainable management of Tasmania's water resources in a changing climate

Proposal – Review water accountability and reporting frameworks to strengthen risk-based water use and water conveyance measurement and reporting

Summary:

- Mandatory tamper proof meters, increase monitoring of compliance, active enforcement and stronger penalties.
- Public reporting of allocations, to users and the environment.
- Accurate reporting of water use.
- Public reporting of enforcement including breaches, compliance and penalties.

Proposal - Review the water allocation policy framework to ensure it considers best available science in a changing climate, continues to deliver outcomes in line with the objectives of the WMA, and enhances transparency of decision making

Summary:

- Review and update water management plans
- Update environmental flow data and surface water modelling
- Update data to inform the Water Assessment Tool
- Appropriately value water, including the contribution it makes to Brand Tasmania
- Improve community confidence via communication and engagement

Goal 2 Effective regulation, strong entitlements and planning

Proposal - Further enhance options available for developing collaborative water management arrangements, and

Proposal - Develop an operating framework for local water user groups

Summary:

- Expand the range of relevant stakeholders
- Integrate the broader stakeholder group when developing the proposals

Proposal - Revise the legislative framework underpinning risk-based water management planning

Summary:

- Develop water management plans for catchments/river systems as per State, Commonwealth and international requirements to address economic, social and environmental complexities.
- The Swan River Catchment requires a water management plan as a matter of priority.

Background

This submission has been prepared by a working group of the Glamorgan Spring Bay Natural Resource Management Committee (NRMC).

The NRMC is a Special Committee of the Glamorgan Spring Bay Council (GSBC) pursuant to Section 24 (S24) of the *Local Government Act 1993.*

The purpose of the NRMC as per the 2018 Terms Of Reference is to:

'.provide a means of exchanging information about, participates in and progresses NRM initiatives involving the community (via the committee), stakeholders and GSBC.'

The Objectives of the Committee are as follows:

To conserve and protect the natural environment and improve natural resource management in the Glamorgan Spring Bay municipal area by:

- carrying out, supporting and / or assisting with on-ground works that address priority environmental management and sustainability issues;
- carrying out, supporting and / or assisting with studies, research and projects to improve our knowledge of the natural environment and natural resources, and facilitate practices of sustainable development and planning;
- provide support and advice on matters relevant to natural resource management within the area;
- organise and deliver community educational and awareness programmes;
- provide opportunities, support mechanisms and / or resources to enhance community capacity to participate in natural resource management practices, activities and projects.

Oversee the development and implementation of the Catchments to Coast program.

Oversee the development and implementation of the Prosser, Little Swanport and Swan Apsley Catchment Plans, and the Glamorgan Spring Bay Weed Management Plan.

Form positive community, government, business and industry partnerships for the purposes of attracting resources for Natural Resource Management activities within the area.

The NRMC has, since inception in 2005, built upon the work of the GSBC Landcare Committee (also a S24 Committee of the GSBC) in the natural resource management and integrated catchment management space.

The water management catchments of the Prosser, Little Swanport and Swan Apsley have been the focus of much work by the NRMC, together with many different stakeholders.

The significance of the water values in these catchments to all those who work, play and visit this beautiful part of the world cannot be understated.

We are pleased that this important strategy is being developed and we hope that our input is of value, and look forward to being able to provide further comment on the draft strategy in the near future.

Submission

The responses below to the selected Proposals identified in the Position Paper have been written in context of the objectives of the *Intergovernmental Agreement on a National Water Initiative* (IANWI), *The Resource Management and Planning System* (RMPS), and the *Water Management Act 1999* (WMA) (see Appendix 1).

Goal 1 Sustainable management of Tasmania's water resources in a changing climate

Proposal
Review water accountability and reporting frameworks to strengthen risk-based water use and water conveyance measurement and reporting

The current framework for accountability and reporting of water use appears fragmented, inequitable and unable to adjust to changes to the available resource due to climate change.

The *Water Management Act* calls for management to be "sustainable" and

- Provide for the **fair**, orderly and efficient allocation of water resources to meet the community's needs

In respect to accountability

At one end of the scale, Irrigation Schemes managed by Tasmanian Irrigation operate on sensible and effective take controls measures, determined to account for "environmental flows". Reliable and accurate monitoring of water use by way of metered takes and outputs results in an equitable and reliable user-pays business model for all involved.

TasWater is responsible for the provision of water to households across the state. It is clear they have strict requirements for managing their extraction from river systems, storage of that allocation and subsequent metered supply to its customers. Again, it has developed a fair and equitable user-pays system.

At the other end of the scale, historical Water Licences appear far from fair. Individuals can hold numerous entitlements with negligible monitoring, no metering, no enforcement and no record of penalties.

The loopholes in the system created by conveyance options, again with no metering or effective monitoring, can leave communities and environments in stress.

On page 25 and 26 of the Position Paper, there is an acknowledgment that "*there has been limited collection of water use information*" by the Department. There is also an acknowledgment of the "*need for an improvement in accounting of water* conveyance".

The requirement for meters on all direct water extraction from rivers for irrigation should now be mandatory. Metering water movement for conveyance should also be mandatory, otherwise it can be exploited.

In respect to Reporting

The public reporting of water allocation, entitlements and use must be transparent.

The Position Paper confirms that there is "*limited collection of water use data*" and "*there is no dedicated database for storing and reporting on water use information*".

To provide meaningful reporting on water use, accurate information/ data has to be collected. Metering is the obvious method of collection.

With the availability of remote interrogation technology, it is logical to require this technology on **all** extraction from rivers.

Without metering and monitoring of extraction there is no hope of effective regulation and reporting of water use.

Without reliable information about water use it is impossible to meet the third criteria of the *Water Management Act*, which is to

- Maintain ecological processes and genetic diversity for aquatic and riparian ecosystems

Reporting of allocation and actual quantities set aside for the environment is also critical, particularly in terms of monitoring and managing river health.

One of "The Opportunities for Improvement" listed in Goal 2 emphasises "*strong entitlements*" which is fair enough. However along with strong entitlement, there needs to be strong enforcement of compliance and appropriate penalties.

The current penalties for water theft by those operating on Water Licences are demerit points alone. Demerit points have no meaningful consequences.

Access to water to generate a profit is a privilege not a right. People who steal property from others in the community face consequences for stealing through the court system. People who steal water should also face consequences for their actions.

Urban water users don't have the opportunity to steal water because our water use is metered. Despite this entitlement which we pay for, from time to time we are required to comply with water restrictions with financial penalties if we don't comply.

When the flows in a river reach a point where a "cease to take" notice is issued to irrigators – that should mean cease to take for all irrigators extracting from a river, irrespective of conveyance.

A review of the "cease to take" trigger locations and the low flow triggers, needs to occur as the size of pumps and volumes that can be taken over a short period of time is impacting on our river health.

To summarise this section, we recommend:

- Mandatory tamper proof meters, increase monitoring of compliance, active enforcement and stronger penalties.
- Public reporting of allocations, to users and the environment.
- Accurate reporting of water use.
- Public reporting of enforcement including breaches, compliance and penalties.

Proposal

Review the water allocation policy framework to ensure it considers best available science in a changing climate, continues to deliver outcomes in line with the objectives of the WMA, and enhances transparency of decision making

We welcome the proposed review of the water allocation policy framework to ensure it considers best available science in a changing climate.

There are three major catchments in the Glamorgan Spring Bay Municipality, being the Prosser, Little Swanport and Swan / Apsley.

The water allocation framework and process in Tasmania is currently reliant on information and modelling that is, in the case of the catchments in the Glamorgan Spring Bay Municipality (and we suspect state-wide) outdated and makes little provision for climate change.

In making comment on the Rural Water Use Strategy Position Paper and more specifically the water allocation process in Tasmania as it relates to a changing climate we use the Little Swanport (LSP) catchment as a case study given it is the only catchment within the Glamorgan Spring Bay Municipality with a Water Management Plan.

Case Study: *Water management in the LSP catchment*

The Water Management Plan (WMP) for the Little Swanport catchment (https://stors.tas.gov.au/au-7-0054-00416_1) underpins the management of the catchment's water resources in line with the objectives of the *Water Management Act 1999*, and *the State Policy on Water Quality Management 1997*, with recent water licenses having been granted totalling 673 megalitres.

The vision, objectives and intent of the Water Management Plan are current and relevant. However, the plan is outdated, having been written in 2006 and not reviewed or updated since.

The Tasmanian Environmental Flows (TEFlows) Project which was conducted in 2010 applied a more holistic approach to links between flow regimes, biodiversity and critical ecosystem processes on rivers in eastern Tasmania including the Little Swanport, which was classed as having a high degree of flow variability, including very low flow and cease-to-flow conditions, as well as large floods. But again, given ten years have passed, the recommendations of this project may no longer reflect contemporary environmental needs.

A later ecosystem response model was developed for the LSP estuary, which highlighted the critical importance of river flow in dictating the magnitude of physical exchanges across the oceanic boundary, especially maintaining low flows for estuarine productivity, which further supported the cease-to-take requirements for low flows in the Little Swanport Water Management Plan. However, given the plan has not been reviewed since it was written in 2006, there is no recognition of the ecosystem response model in the plan.

The TEFlows final report concluded that for rivers of highly variable flow regimes including LSP, preserving hydrologic variability is a key issue as this is a primary driver for complexity and diversity of both biological and physical character.

If large instream dams (and it is obvious that they are) are used to overcome the unpredictability of flood harvesting in these rivers, 'then it will be imperative that environmental flow assessments in these catchments include recommendations that will guide the design and operation of such storages in order to preserve key flow regime characteristics'.

Large flood events also cause large-scale disturbance and maintain sediment movement throughout the river system '*..however, the construction of large instream dams will impact on downstream sediment supply, and environmental flow assessments should recognise this and provide guidance to water managers'* (DPIPWE 2010, Tasmanian Environmental Flows (TEFlows) Project Technical Report. Water Assessment Aquatic Ecology Report Series, Report No. WA 09/10. Water and Marine Resources Division. Department of Primary Industries, Parks, Water and Environment, Hobart, Tasmania)

Despite these recommendations there has been no further assessments of environment flows in the Little Swanport catchment since the TEFlows Project, even though the patterns of rainfall have significantly changed, being much more variable from extremely low to no flow and severe drought in 2006-8 (280mm - 400mm rainfall per annum) and again in 2019/20, and floods in 2016 with in excess of 1.1 m of rain for the year and an extreme rainfall event on the 29th January 2016 that caused widespread damage across the catchment. Furthermore, recommendations from the TEFlows project in relation to the construction of large-scale dams in rivers with highly variable flow regimes are not being met.

The Water Management Plan also required that water flow meters were to be introduced within 12 months at all extraction sites to monitor the rate and quantity of extraction. However, there are still very few, if any, meters in place and so minimal records of water extraction from the river.

DPIPWE's Water Assessment Tool (the main resource used to determine water availability for water licence approval) and the modelling behind it seem totally reliant on historical data compiled in the 2000s with an inclusion in or around 2010 from the Tasmanian Sustainable Yield project "C Dry scenario" into its hydrological modelling.

There are several areas of concern for us relating to water management in Tasmania and climate change.

1. That water is appropriately valued, and a more holistic view is used when determining environmental flow requirements. The environment and the natural values that are part of it are the foundation on which downstream users and communities are built—from agricultural and aquaculture products that can demonstrate they are produced in an environmentally sustainable way to a tourism industry and Brand Tasmania that is underpinned by an image of clean, untouched, pristine and healthy environment.

The economic value to the State of downstream stakeholders who rely on the environment must be taken into consideration in determining environmental flow requirements and the surety thereof. In the case of the Swan Apsley Catchment there is no water management plan, no water meters on some offtakes and a history of a river system under stress. These catchments feeds two International recognised Ramsar wetlands (Moulting Lagoon and Apsley Marshes), and the environment that supports the Freycinet National Park which is a Tasmanian icon and a globally recognised location.

Climate change alone is a risk to all these things. If these values are to be maintained and the water resource is to be managed in a sustainable manner then their true value and the reliance on river flows must be realised.

2. The currency of information used to determine water availability in a catchment. We note that one of the proposals being considered under the Rural Water Use Strategy is the update of surface water models with more recent predictions of future climate. Given the above case study, the objectives of the Water Management Act 1999, and the apparent disparity between the information used in the Water Assessment Tool and best practice, we consider it essential that surface water models are updated and frequently and formally reviewed to ensure they remain relevant and reflect best practice.

3. Communication and community engagement. The water management system in Tasmania is complex and not easily understood. The presence of water management plans for some catchments and not for others and the apparent lack of enforcement with licence conditions leads to an environment of mistrust and confrontation within communities. That and the lack of currency of the existing water management plans and the underlying science in the water allocation framework does little to give community confidence in the process as it relates to a changing climate. The Rural Water Use Strategy and any review of the water management framework should focus on transparency of decision making, contemporary science and continued stakeholder engagement as a way of building community confidence.

Goal 2 Effective regulation, strong entitlements and planning

Proposal
Further enhance options available for developing collaborative water management arrangements

Proposal
Develop an operating framework for local water user groups

The committee's submission relating to the proposals above is two-fold:

1. Expand the range of relevant stakeholders
2. Integrate the broader stakeholder group when developing the proposals above

We acknowledge the broad range of stakeholders, representing diverse interest groups, listed in Appendix 4. Additional stakeholders could include the following:

- Tasmania Fire Service – to ensure access to water for fire-fighting
- Tourism Tasmania and/or local tourism representatives where appropriate – to consider the impact of environmental flows on the Tasmanian Brand, tourist economy and visitor experience
- Local community organisations – to ensure rural communities are represented

Notwithstanding the broad range of stakeholders listed in Appendix 4, in some sections of the Position Paper, the reference to stakeholders seems to be limited to agricultural users. The committee supports the Government's commitment to grow the value of Tasmanian agricultural production. However, prioritising stakeholders from this sector at the expense of others may hamper the Rural Water Use Strategy's ability to fulfil the social and environmental outcomes of the National Water Initiative (NWI). A key goal of the NWI is to manage water for environmental outcomes (Position Paper p. 5). This goal is unlikely to be achieved if stakeholders representing environmental interests are not included at all levels of decision making.

Agricultural users appear to be prioritised under Goal 2 '*effective regulation, strong entitlements and planning*'. For example, the issue listed under 2.3 '*local involvement in water management*' refers to 'taking of water'. Similarly, the 'stakeholder views' listed on page 34 of the Position Paper are limited to managing water takes: ' *opportunities for involvement ranged from rostering of irrigation or flow sharing between users to minimise impacts upon base flows in the river, to local detection and announcement of high flow events*.'

Page 33 of the Position Paper states that '*The Department regularly seeks the input of relevant stakeholders into the design of water management arrangements'*. 'Relevant stakeholders' in this context should not only refer to those who draw water but a broader range of stakeholders to ensure that the social, environmental and economic objectives are met. Without incorporating this broader group of stakeholders, it becomes difficult to meet AgriVision 2050's aims to promote growth in agriculture whilst also protecting '*the natural environment and the Tasmanian Brand*' (Position Paper p. 1).

The committee notes that the '*Government is currently considering amendments to the WMA, ICA and other relevant legislation to allow water entity self-management of publically [sic] owned irrigation schemes. These amendments will allow for greater local involvement in water*

management.' We recommended that 'local involvement' in this context incorporates a broad range of stakeholders, representing diverse interests.

The committee's recommendations as outlined above will help ensure the Rural Water Use Strategy meets the following objectives:

Intergovernmental Agreement on a National Water Initiative (IANWI)

23. iii) statutory provision for environmental and other public benefit outcomes, and improved environmental management practices;

ix) addressing future adjustment issues that may impact on water users and communities.

Resource Management and Planning System (RMPS)

(a) to promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity; and

(b) to provide for the fair, orderly and sustainable use and development of air, land and water; and

(c) to encourage public involvement in resource management and planning; and

(d) to facilitate economic development in accordance with the objectives specified in paragraphs (a) , (b) and (c); and

(e) to promote the sharing of responsibility for resource management and planning between the different spheres of Government, the community and industry in Tasmania.

Water Management Act 1999 (WMA)

(b) recognise and foster the significant social and economic benefits resulting from the sustainable use and development of water resources … and

(c) maintain ecological processes and genetic diversity for aquatic and riparian ecosystems; and

(d) provide for the fair, orderly and efficient allocation of water resources to meet the community's needs; and

(e) increase the community's understanding of aquatic ecosystems and the need to use and manage water in a sustainable and cost-efficient manner; and

(f) encourage community involvement in water resource management.

Proposal
Revise the legislative framework underpinning risk-based water management planning

The Committee support the concept of making water management plans (WMPs) '*easier to use and understand*' (p.31).

The Position Paper states that *'Statutory water management plans are prepared where there is economic, social or environmental complexity associated with water resource management decisions*' (p. 32).

The DPIPWE document Water Management Planning GUIDING PRINCIPLES FOR THE DEVELOPMENT OF STATUTORY WATER MANAGEMENT PLANS IN TASMANIA states that:

Water Management Plans are initiated by the Minister in circumstances where formalised management arrangements that respond to local water management issues are required to ensure that the objectives of water resource management in Tasmania are met (DPIPWE 2018).

The document also states that:

'Water Management Plans are developed when water resources are at risk from increasing levels of extraction, increasing complexity of water access rights or deteriorating condition of aquatic ecosystems' (DPIPWE 2018, p. 1).

The above statements from the Department highlight concerns and confusion as to why the Swan Apsley Catchment in Glamorgan Spring Bay has no WMP/ WMPs.

The Swan River catchment has economic, social and environmental complexity associated with water resource management decisions. It also requires formalised management arrangements that respond to local water management issues to ensure that Tasmania's water resource management objectives are met. There are also increasing levels of extraction, increasing complexity of water access rights and possible deterioration of ecosystems.

Moulting Lagoon is a Ramsar listed wetland.

The DPIPWE website states:

Managing Ramsar sites - As signatories to the convention the Australian Government has undertaken to promote the conservation of recognised wetlands, and provides an undertaking to maintain the ecological character and hydrological functions of the sites. Under the Australian Constitution, day to day management of sites is delegated to the states and territories and therefore the obligations listed above also apply to Tasmania (DPIPWE 2019).

Moulting Lagoon lies at the end of the Swan and Apsley catchments. It is adjacent to an additional Ramsar listed wetland, the Apsley Marshes. Water resource use is listed as a threat to Moulting Lagoon in the sites Ecological Character Description (Department of Sustainability, Environment, Water, Population and Communities, 2011, p. 58).

The Moulting Lagoon Management Plan includes the following management prescription:

Ensure that the ecological requirements of Moulting Lagoon are accounted for in establishing environmental flows for the Swan River, and are appropriately considered in the assessment and development of any further irrigation infrastructure and water catchment strategies that may have an impact on these requirements (Parks and Wildlife Service 2007, p. 30).

In 2001, the then Department of Primary Industries, Water and Environment (DPIWE) published a report titled Environmental Water Requirements for the Swan River. Despite being 19 years old, it highlights community and scientific values for flow in the Swan River. The information in this report should be considered (and reviewed/updated for contemporary values) with regard to the need for a WMP for the catchment.

This report states:

It should also be stressed that an essential part of setting an environmental flow is the monitoring of compliance and environmental benefit. Further assessment may need to be undertaken in the future if monitoring highlights values that are not being met by the negotiated flow regime (DPIWE 2001, p. 24).

Further:

It should also be noted that the Swan River discharges into King Bay, of Moulting Lagoon, which holds significant conservation status as a Ramsar listed wetland. Therefore, the defined flows for the Swan River should encompass the natural hydrograph as closely as possible to ensure minimal impact on the estuarine environment (DPIWE 2001, p. 27).

Social uses of the catchments water are also important. These include recreational use, for example, fishing, swimming, hunting, boating and camping. These activities are popular with local residents, as well as part time residents (holiday house owners) and of course visitors and tourists.

Economic complexities in the catchment associated with water resource management decisions include of course agriculture, and also other important industries such as aquaculture, forestry and tourism.

To add to this complexity another important water use is domestic/potable water for the Swansea township and surrounds.

An additional water use complexity – water for fire fighting - was demonstrated during summer with the 5000 hectare bush fire that was 1.5km from Swansea.

Therefore, it is unclear why the Department has not prepared a WMP for the Swan. Clarification as to why and how this decision has been made would be of interest to the community and all stakeholders. This example illustrates why changes need to be made to the WMP process and why these changes need to be addressed in DPIPWE's Rural Water Use Strategy.

It is noted that the Swan River has a Water Management Statement (WMS). However, as noted in the Position Paper, 'Water Management Statements are not statutory instruments and are not referred to in the WMA' (p. 32).

In addition to this, the WMS for the Swan River is currently unavailable on the DPIPWE website which limits further comment:

The Swan River Water Management Statement published in April 2019 is currently under review.

The ephemeral and flashy nature of catchments on Tasmania's east coast means that the existing allocation framework referenced in the Statement is not necessarily a good fit for determining the reliability at which water is available for allocation (DPIPWE 2020a).

We support the paragraph below from the Position Paper as the above example of the Swan catchment indicates that current water management planning in some areas of Tasmania is inadequate, unresponsive, outdated, untimely and ineffective, in some cases simply by its absence.

'*Water management planning should be adaptive and responsive to water management issues as they emerge. A review of the water management provisions of the WMA would assess whether the legislative framework best provides for contemporary risk-based water management planning that is timely, adaptive and responsive, and identify changes to improve the efficiency and effectiveness of development and review processes for water management plans*' (p. 33).

The Productivity Commissions (2020, p. 12) examination of jurisdictions '…progress towards achieving NWI-compliant water entitlements and plans, as well as progress towards best-practice water planning more generally (including the implementation of its 2017 recommendations)' is welcomed as a result of the above example.

In addition to the documents referred to above, the following documents also contain information about the economic, social and environmental complexity associated with water resource management decisions in the Swan catchment and about why formalised arrangements are required to respond to issues, to ensure Tasmania's water resource management objectives are met.

DPIW 2006, *Waterways Monitoring Report – Swan Apsley Catchment*, Tasmanian Government.

DPIW 2009, *Annual Waterways Report: Swan-Apsley Catchment*, Tasmanian Government.

Entura 2015, *Proposed Swan River Irrigation Scheme Environmental Flow Assessment*, Hydro-Electric Corporation, Cambridge.

Glamorgan Spring Bay Natural Resource Management Committee, 2013, *Swan Apsley Catchment Plan 2013 – 2018,* Glamorgan Spring Bay Council, Triabunna, Tasmania.

Hale, J. and Butcher, R., 2011, *Ecological Character Description for the Apsley Marshes Ramsar Site.* Report to the Department of Sustainability, Environment, Water, Population and Communities, Canberra.

NRM South, 2014, *Moulting Lagoon: A Report to the Community*. Hobart.

Please note that the concerns outlined in the example above are not regarding water use via the Tasmanian Irrigation Swan Valley Irrigation Scheme. They are regarding water use outside of the Irrigation Scheme.

REFERENCES

Department of Primary Industries, Water and Environment 2001, *Environmental Water Requirements for the Swan River*, DPIWE, Hobart.

Department of Sustainability, Environment, Water, Population and Communities, 2011, *Moulting Lagoon Ramsar Site Ecological Character Description.* Canberra.

DPIPWE 2018, *Water Management Planning GUIDING PRINCIPLES FOR THE DEVELOPMENT OF STATUTORY WATER MANAGEMENT PLANS IN TASMANIA*, Tasmanian Government, viewed 11 June 2020, < https://dpipwe.tas.gov.au/Documents/Guiding%20Principles%20for%20Water%20Management%20Planning.pdf>.

DPIPWE 2019, *Ramsar Wetlands, Tasmanian Government*, viewed 11 June 2020, < https://dpipwe.tas.gov.au/conservation/flora-of-tasmania/tasmanias-wetlands/ramsar-wetlands>.

DPIPWE 2020a, *Water Management Statements*, Tasmanian Government, viewed 11 June 2020, < https://dpipwe.tas.gov.au/water/water-management-statements>.

Parks and Wildlife Service, 2007, *Moulting Lagoon Game Reserve (Ramsar Site) Management Plan* 2003. Department of Tourism, Arts and the Environment, Hobart.

Productivity Commission 2020*, National Water Reform Issues Paper*, Australian Government, viewed 11 June 2020, https://www.pc.gov.au/inquiries/current/water-reform-2020/issues.

APPENDIX 1

Intergovernmental Agreement on a National Water Initiative (IANWA)

OBJECTIVES

23. Full implementation of this Agreement will result in a nationally-compatible, market, regulatory and planning based system of managing surface and groundwater resources for rural and urban use that optimises economic, social and environmental outcomes by achieving the following: i) clear and nationally-compatible characteristics for secure water access entitlements;

ii) transparent, statutory-based water planning;

iii) statutory provision for environmental and other public benefit outcomes, and improved environmental management practices;

iv) complete the return of all currently overallocated or overused systems to environmentally-sustainable levels of extraction;

v) progressive removal of barriers to trade in water and meeting other requirements to facilitate the broadening and deepening of the water market, with an open trading market to be in place;

vi) clarity around the assignment of risk arising from future changes in the availability of water for the consumptive pool;

vii) water accounting which is able to meet the information needs of different water systems in respect to planning, monitoring, trading, environmental management and on-farm management;

viii) policy settings which facilitate water use efficiency and innovation in urban and rural areas;

ix) addressing future adjustment issues that may impact on water users and communities; and

x) recognition of the connectivity between surface and groundwater resources and connected systems managed as a single resource.

The Resource Management and Planning System (RMPS)

The objectives of the resource management and planning system of Tasmania are –

(a) to promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity; and

(b) to provide for the fair, orderly and sustainable use and development of air, land and water; and

(c) to encourage public involvement in resource management and planning; and

(d) to facilitate economic development in accordance with the objectives specified in paragraphs (a) , (b) and

(e) to promote the sharing of responsibility for resource management and planning between the different spheres of Government, the community and industry in Tasmania.

2. In item 1(a) ,

sustainable development means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural wellbeing and for their health and safety while –

(a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and

(b) safeguarding the life-supporting capacity of air, water, soil and ecosystems; and

(c) avoiding, remedying or mitigating any adverse effects of activities on the environment.

Water Management Act 1999 (WMA)

6. Objectives of Act

(1) The objectives of this Act are to further the objectives of the resource management and planning system of Tasmania as specified in Schedule 1 and in particular to provide for the use and management of the freshwater resources of Tasmania having regard to the need to –

(a) promote sustainable use and facilitate economic development of water resources; and

(b) recognise and foster the significant social and economic benefits resulting from the sustainable use and development of water resources for the generation of hydro-electricity and for the supply of water for human consumption and commercial activities dependent on water; and

(c) maintain ecological processes and genetic diversity for aquatic and riparian ecosystems; and

(d) provide for the fair, orderly and efficient allocation of water resources to meet the community's needs; and

(e) increase the community's understanding of aquatic ecosystems and the need to use and manage water in a sustainable and cost-efficient manner; and

(f) encourage community involvement in water resource management.

(2) It is the obligation of the Minister, the Secretary, a water entity and any other person on whom a function is imposed or a power is conferred under this Act to perform the function or exercise the power in such a manner as to further the objectives specified in subsection (1) and in

Rural Water Use Strategy

Position Paper

March 2020

Water and Marine Resources Division
Department of Primary Industries, Parks, Water and Environment

Tasmanian Government

INVITATION TO COMMENT

The purpose of this paper is to help you have your say on the way the Tasmanian Government manages the State's fresh water resources in the rural water supply sector into the future.

The Tasmanian Government recognises the importance and value of water. Tasmania represents less than 1% of Australia's land mass but has around 12% of the nation's fresh water supply and 27 percent of Australia's freshwater dam storage capacity. The water available in Tasmania for consumptive purposes is plentiful, particularly when compared with the land available for irrigation. This 'liquid gold' is a natural advantage when it comes to producing goods and undertaking other activities which rely on water and the Tasmanian Government wants to ensure that Tasmania is properly positioned to continue to realise the benefits of our natural advantage.

The Australian Bureau of Statistics estimated that around 8% of the land used for agricultural production in Tasmania is irrigated with a gross value of production estimated to be $979 million during 2017-18. Notwithstanding that less than 10 per cent of the state's agricultural land is irrigated, it produces more than 50 per cent of the gross value of Tasmania's agricultural production.

The Government has a plan to build a modern economy to create jobs, with a target of growing the value of Tasmanian agricultural production to $10 billion by 2050. This will require that water is, sustainably and viably, made available when and where it can best contribute to productive outcomes. We have therefore initiated the development of the Rural Water Use Strategy to ensure that our water management framework is the best we can make it.

This Position Paper has been prepared by the Department of Primary Industries, Parks, Water and Environment (DPIPWE) to provide an overview of the proposals that may be included in the Government's Rural Water Use Strategy.

The Strategy's purpose will be to guide the State's future water management arrangements to ensure integrated, fair and efficient regulation and compliance of the State's water resources to deliver sustainable outcomes for irrigators, rural communities and the environment and maintain Tasmania's competitive advantages in a changing climate.

When complete, the Strategy will set the direction for the rural water sector for the next few decades. This will underpin the sustainable development of the State's water resources to support an increase in irrigated agriculture to improve the prosperity of rural communities and the broader Tasmanian society.

We are not starting from scratch, continuous improvement of the regulatory settings for water resource management in Tasmania is business as usual under the current water management framework. The Rural Water Use Strategy seeks to look into the future to enhance the water management framework to respond to change.

Following this consultation process, the input provided will be used to define the key priorities of the Rural Water Use Strategy.

I am passionate about making wise use of our water resources to benefit Tasmanians and I encourage everyone to consider the information contained in this paper and provide your view on the way fresh water is managed in Tasmania. Managing our fresh water resources is a shared responsibility that we all stand to benefit from.

Guy Barnett

Minister for Primary Industries and Water

HOW TO HAVE YOUR SAY

The purpose of this paper is to help you have your say on managing the State's freshwater resources into the future.

The paper provides an overview of the key issues that will be included in the Government's Rural Water Use Strategy. When complete, the Strategy will set the direction for the rural water sector for the next few decades.

The paper invites discussion on the proposals. However, they are not final and any suggestions put forward that would help achieve our objectives will be considered.

All comments on this paper are sought in writing and submissions must be received by 5.00 pm on 26th June 2020.

Submissions can be either emailed to:

water.policy@dpipwe.tas.gov.au

or posted to

Rural Water Use Strategy Project

Water Resources Group, DPIPWE

GPO Box 44

Hobart, TAS 7001

All submissions will be treated as public information and made available on the Department's website. If you wish for your submission to be treated as confidential, either whole or in part, please note this in writing at the time of making your submission.

No personal information other than the name of individual submitters will be disclosed.

The Right to Information Act 2009 and confidentiality

By law, information provided to the Government may be provided to an applicant under the provisions of the Right to Information Act 2009 (RTI). If you have indicated that you wish all or part of your submission to be confidential, the statement that details your reasons will be taken into account in determining whether or not to release the information in the event of an RTI application for assessed disclosure.

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PART A – INTRODUCTION

INTRODUCTION

The Government has a plan to build a modern economy to create jobs, with a target of growing the value of Tasmanian agricultural production to $10 billion by 2050. This will require that water is, sustainably and viably, made available when and where it can best contribute to productive outcomes.

The Government has therefore initiated the development of the Rural Water Use Strategy to ensure that our water management framework supports development, investment and the wise use of water. The Strategy will guide the State's future water management arrangements to ensure integrated, fair and efficient regulation of the State's water resources to deliver sustainable outcomes for irrigators, rural communities and the environment and maintain Tasmania's competitive advantages in a changing climate.

This position paper has been prepared by the Department of Primary Industries, Parks, Water and Environment (DPIPWE) to provide an overview of proposals that may be included in the Government's Rural Water Use Strategy. Stakeholders are encouraged to provide written feedback on the proposals set out in this paper.

WHY DEVELOP A RURAL WATER USE STRATEGY?

Agriculture is a key pillar of Tasmania's economy. The Government's AgriVision 2050 policy is to grow the value of Tasmanian agricultural output to $10 billion by 2050. AgriVision 2050 sets out a vision that grows the agricultural sector whilst looking after Tasmania's primary production sectors, the natural environment and the Tasmanian Brand. To this end, Agrivision 2050 is about promoting growth in agriculture whilst also protecting the natural assets of Tasmania which set our State and our products apart.

The goal of increasing the rate of growth in agricultural productivity and profitability requires transformational change, led by agribusiness and supported by Government. Tasmania is investing significantly in irrigation infrastructure and research, development and extension activities in agriculture. This investment is creating a step change in the potential for growth in agribusiness in Tasmania; and is changing the way water resources are accessed and managed in catchments across the State. This change is occurring against a backdrop of increasing competition for water resources and an increasing awareness of the potential effects of changing climate on water resource reliability.

In response to these changes, the Government has committed to develop a Rural Water Use Strategy to:

- Guide the State's future water management arrangements to ensure integrated, fair and efficient regulation and compliance of the State's water resources; and

- Deliver sustainable outcomes for irrigators, rural communities and the environment and maintain Tasmania's competitive advantages in a changing climate.

DEVELOPING THE RURAL WATER USE STRATEGY

The water management framework

In the context of the Rural Water Use Strategy, the water management framework is broadly defined as the governance framework for the allocation and use of freshwater resources in Tasmania as well as the systems and tools that are used to manage information and support decision making. The framework is made up by:

- Legislation (Acts and Regulations);
- Policies which guide the discretionary decision making under the legislation;
- Administrative arrangements for managing water resources under the legislation; and
- Principles and practice for how the Department engages with the community and water users; and
- Systems and tools used to support decision making.

An overview of the key components of the water management framework is provided in Figure 1. Additionally, a summary of each of the Acts and Regulations is included in Appendix 1.

The *Water Management Act 1999* (WMA) provides broad directions for the Minister for Primary Industries and Water to oversee the sustainable use and development of all freshwater resources in the State. This includes the management of dispersed surface water and water in watercourses, lakes, wetlands and groundwater resources.

The objectives of the WMA (listed in Appendix 2) are to further the objectives of the Resource Management and Planning System of Tasmania (RMPS) and it is the obligation of the Minister, the Secretary, a water entity and any other person on whom a function is imposed or a power is conferred under the WMA to perform the function or exercise the power in such a manner as to further the objectives of the Act and of the RMPS.

There are a range of regulatory requirements under the WMA including water licensing; watercourse conveyance; dam and well works permitting; and dam safety provisions. The WMA also provides for the preparation of statutory water management plans, establishment of water districts and Trusts to administer such districts and licensing of well drillers and permitting of well works. The WMA has been amended on several occasions, to improve the operational efficiency and ensure consistency with national water reform obligations such as the National Water Initiative (NWI). The most recent amendments to the WMA were made in 2015 focussing on streamlining the dam works permit approval process.

The key focus of the WMA is to regulate the taking of water through a statutory system of water entitlements. Statutory rights to take water are provided for in Parts 5 and 6 of the

WMA. The WMA provides some powers to regulate the use of water, though these are limited to how a water allocation may be taken, and does not extend to approval of use. In addition to the WMA, a number of other legislative instruments support the water management framework, in particular those that require further consideration through this Strategy as they relate to the rural water use sector include, the *Irrigation Clauses Act 1973*, *Waterworks Clauses Act 1952*, *Irrigation Company Act 2011* plus a range of subordinate legislation under the WMA. The legislative framework is also supported by a range of Ministerial policies, guidelines, protocols, statutory plans, codes and procedures. Note that urban water, sewerage and drainage are not within the scope of the Rural Water Use Strategy.

Legislation

- Water Management Act 1999 (WMA)
- Irrigation Clauses Act 1973 (ICA)
- Waterworks Clauses Act, 1952
- Irrigation Company Act 2011
- Water Management Regulations 2019
- Water Management (Safety of Dams) Regulations 2015
- Water Management (Electoral and Polling) Regulations 2019

National water policy

- National Water Initiative

Policies and Guidelines

- Surface water allocation decision framework
- Guideline- Accounting for your water
- Guiding principles for water management planning in Tasmania
- Guiding principles for water trading
- Guidelines to be followed in regards to Dam Safety
- Enforcement policy for the Water Management Act 1999
- Water resource management during extreme dry conditions
- Dam works assessment decision framework
- Codes and guidelines relating to dam works

Principles and practices for public engagement

- Water Resources Group Stakeholder Communication and Engagement Strategy

Information management systems and tools used to support decision making

- Water Information Management System (WIMS) – public access via the Water Information System of Tasmania (WIST)
- Groundwater Information Management System (GWIMS) – public access via the Groundwater Information Access Portal
- Water Assessment Tool (WAT)
- Surface water monitoring information – public access via the Water Information Tasmania Web Portal
- Conservation and Freshwater Ecosystem Values database (CFEV)
- Natural Values Atlas (NVA)
- River health monitoring program database

Figure 1 Key components of the Water Management Framework

Tasmania's water sectors

Figure 2 provides an overview of the main water sectors in Tasmania as well how water is taken and used under the water management framework. A number of maps are provided in Appendix 3 which provide further information about Tasmania's water sectors.

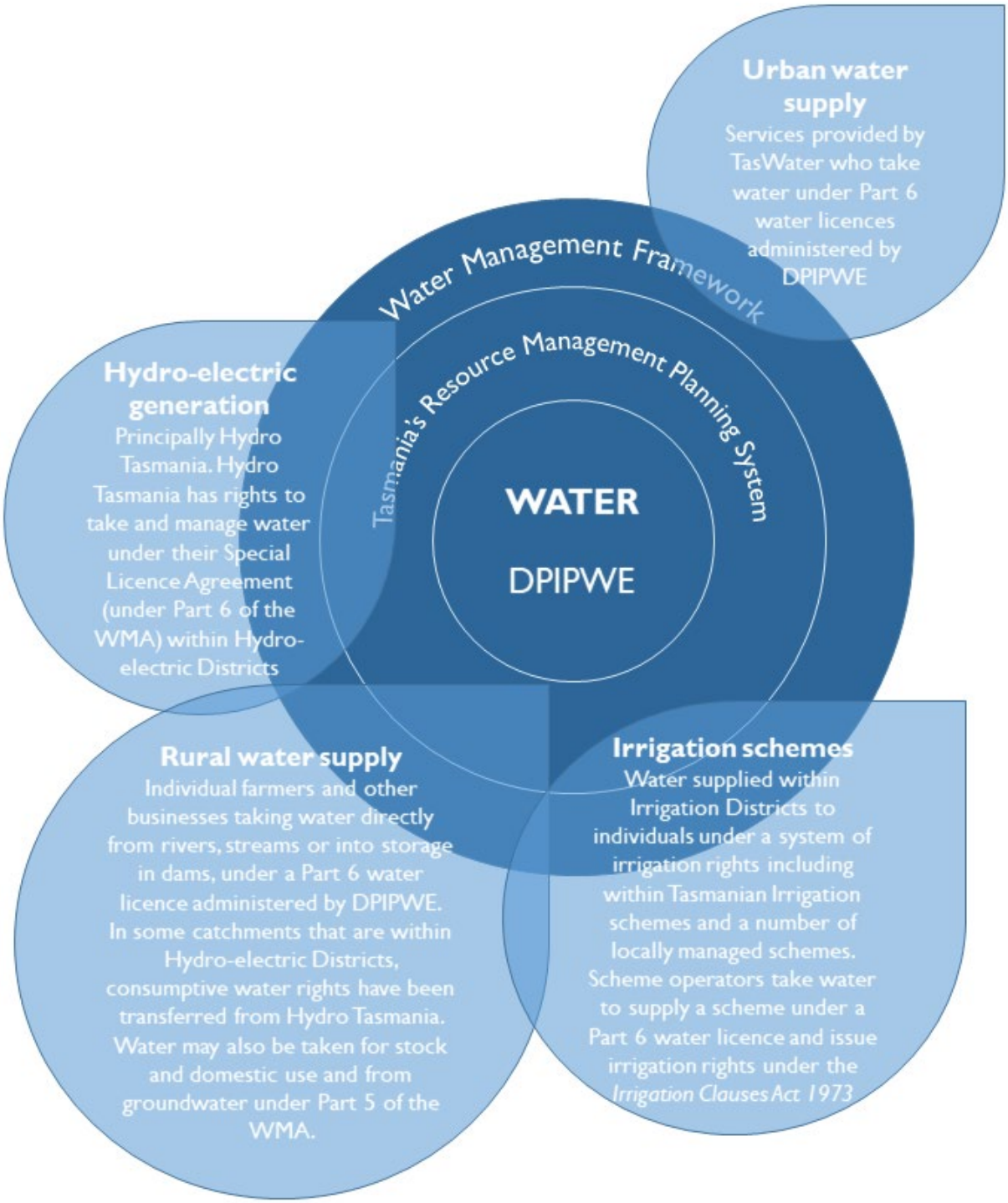


Figure 2 Tasmania's water sectors

National water reform agenda

The Tasmanian Government became a signatory to the National Water Initiative (NWI) on 2 June 2005. The NWI is a comprehensive agreement aimed at, among other things:

- improving water planning and accounting;
- improving the way water is allocated, used and managed for environmental outcomes;
- improving the efficient management of water in urban environments;
- promoting more flexible and profitable water use;
- expanding water markets for greater trade in water; and
- increasing confidence for those investing in the water industry.

The most recent assessment of jurisdictions' progress in implementing the NWI acknowledged that Tasmania has made very significant progress in implementing water reform and meeting its obligations. The report noted that Australia needs a new phase of water reform as past reforms will not be enough to manage challenges associated with population growth and changing climate. It also flagged that further reform in Australia is required in three priority areas: urban water regulation and planning; rural and regional water infrastructure development; and management of environmental water provisions (associated with Murray Darling Basin issues).

At a national level some work has commenced to determine the pathway to a renewed NWI that will take a modular approach focussing on priority topics. The first two priority topics are likely to be urban water and indigenous cultural water, work has already been undertaken at a national level that can form the basis upon which further consideration of these issues can be made. Where linkages are identified between items to be renewed through the NWI and this Strategy they will be highlighted.

Reforms undertaken so far

Continuous improvement of water resource management in the rural water sector is business as usual under the current water management framework. Some key reforms that have been undertaken by Government include:

- The WMA has been amended on several occasions to improve its operational efficiency and ensure consistency with national water reform obligations such as the National Water Initiative (NWI). The most recent amendments to the WMA were made in 2015 focussing on streamlining the dam works permit approval process.
- The Government is currently considering amendments to the WMA, ICA and other relevant legislation to allow water entity self-management of publically owned irrigation schemes. These amendments will allow for greater local involvement in water management.

- The policies, guidelines and protocols that guide the application of the WMA are also reviewed as required to ensure that they continue to deliver their desired outcomes. An example is the Government's Water Resource Management During Extreme Dry Conditions Policy which is reviewed following each occasion that the policy is implemented during an extreme dry.
- The Government has been making significant changes to the rural water supply sector by developing irrigation schemes in partnership with the Australian Government and Tasmanian irrigators and other investors. This public-private partnership has seen the establishment of fifteen new irrigation schemes which make over 100 000 megalitres of water available for distribution to over 200 000 hectares of irrigable land. The Government is now progressing Tranche 3 of irrigation development through the *Pipeline to Prosperity* program.

The Rural Water Use Strategy seeks to look into the future to identify and position further reforms that enhance the water management framework and respond to change.

Consultation and internal analysis

During 2019, DPIPWE staff met with a range of stakeholders[1] and reflected on key elements of the legislative framework to gain insights into the following topics:

- The water management framework - what is working well in the State; where improvements are needed and why; and how the framework can be improved to best facilitate growth in agriculture while protecting Tasmania's other water users, the environment and the Tasmanian Brand.
- Tasmania's Water Resource – the status of our fresh water resources, knowledge gaps and future work to enable more informed decision making and to further support the sustainable development of the State's surface and groundwater resources.
- Water in Business - how Tasmania's agribusinesses are changing and how the water management framework could be improved to make it easier to do business in the State both now and into the future.
- Administrative Efficiency – how simple is it to administer the water management framework.

The Department also undertook its own analysis of the key successes and opportunities for improvement to the Water Management Framework in this context.

The general view was that to date the framework has been working well and that while improvements could be made through relatively minor changes to legislation and policies, no wholesale changes are required.

[1] Appendix 3 lists the stakeholders DPIPWE met with during the targeted stakeholder consultation.

The consultation and internal analysis raised issues and ideas within the following in-scope themes:

- Understanding our freshwater resources
- Understanding water use
- Changing climate
- Allocation of water
- Management of Irrigation schemes
- Local involvement in water management
- Simplifying water management planning
- Valuing our water resources
- Water markets
- Water management information systems
- Strategic water development
- Compliance and enforcement
- Low risk dams

Key successes of the existing framework

Key successes of the existing framework can be highlighted:

- The *Water Management Act 1999* (WMA) has operated through a period of significant policy reform. The legislative framework has accommodated the changes required to ensure water resource management in Tasmania is aligned with the NWI and National Water Reform initiatives.
- The objectives of the WMA have continued to be relevant[2] and in general, the WMA continues to operate effectively.
- The WMA has allowed for risk-based water resource management, including water management planning and monitoring, compliance and enforcement systems.
- The legislative framework has operated relatively efficiently through a period of significant investment in irrigation infrastructure and the transitioning of irrigation schemes from their build phase to operation.
- Water allocation systems have been accommodated that include the ability for local communities to have a say in water resource management, and local communities to

[2] The Objectives of the WMA are included in Appendix 2

own and operate irrigation schemes and other water management districts such as drainage and riverworks districts.

- A major water manager in the State, Hydro Tasmania is able to operate efficiently to maximise benefits to the State and the framework has accommodated innovative water uses in the energy space, for example, mini-hydro development.
- The legislative framework has continued to evolve to adapt to the changing needs of water users and an improved understanding of environmental water requirements.

Opportunities for improvement

Notwithstanding that stakeholders were generally happy with the State's existing freshwater resource management arrangements, discussions with stakeholders and the Department's own analysis highlighted several areas where the water management framework could be improved to ensure Tasmania has a future focused, adaptable and agile water management framework.

Opportunities exist to provide a more contemporary legislative framework for rural water use management; become better positioned to respond to emerging issues; and provide greater clarity within the existing water management framework.

The remainder of this position paper discusses opportunities for improvement grouped within the four goals of the Rural Water Use Strategy which are:

- Sustainable management of Tasmania's freshwater resources in a changing climate
- Effective regulation, strong entitlements and planning
- Strategic development to maximise opportunities from freshwater resources
- Administrative efficiency

SUMMARY OF PROPOSALS

A summary of the proposals outlined in this Paper is provided below. The Government is seeking your views on these proposals and any additional suggestions that would help achieve our objectives.

Goal 1 Sustainable management of Tasmania's water resources in a changing climate

Update surface water modelling to enhance information for decision making in a changing climate
Undertake a strategic review of surface water monitoring networks, and where required, expand or upgrade the water resources monitoring network
Consider knowledge gaps identified in the Groundwater Risk Assessment and Management Framework project, review the state-wide groundwater monitoring network and determine additional funding expectations to better manage groundwater resources
Review the water allocation policy framework to ensure it considers best available science in a changing climate, continues to deliver outcomes in line with the objectives of the WMA, and enhances transparency of decision making.
Continue the River Health Monitoring Program as part of the water management framework
Update surface water models with more recent predictions of future climate
Continue to share information, tools and work together with other government and non-government organisations to leverage projects to address the challenges of changing climate
Review water accountability and reporting frameworks to strengthen risk-based water use and water conveyance measurement and reporting

Goal 2 Effective regulation, strong entitlements and planning

Review the water allocation policy framework to ensure it considers best available science in a changing climate, continues to deliver outcomes in line with the objectives of the WMA, and enhances transparency of decision making.
Explore options to enhance flexibility for irrigators to manage allocations responsively
Explore options to enable greater visibility of allocations and water availability in catchments
Revise the legislative framework underpinning risk-based water management planning
Ensure that Indigenous people have the opportunity to be engaged in water planning in Tasmania
Further enhance options available for developing collaborative water management arrangements
Develop an operating framework for local water user groups
Review policy settings for water trading
Consider legislative and administrative reforms as well as information systems to provide relevant information and register water trades to better support water market development
Investigate alternatives to Australian National Committee on Large Dams (ANCOLD) Guidelines for smaller private dams
Work with industry and the Local Government Association of Tasmania to enhance the knowledge and understanding of the potential for downstream developments to cause changes to upstream dam risk ratings and to ensure that these potential changes are adequately considered in the planning process for new developments
Undertake reforms to enhance administration and operation of irrigation districts
Establish arrangements to better facilitate efficient and effective water management in catchments with multiple water managers

Goal 3 Strategic development to maximise opportunities from water resources

Continue to progress Tranche 3 of irrigation scheme development in partnership with investment from irrigators and the Australian Government
Ensure that the legislative framework under which Hydro Tasmania's water rights and obligations sit provides certainty and confidence for proposals such as Battery of the Nation
Support ongoing development of policies to encourage water recycling and reuse
Investigate options to provide strategic whole of government oversight to emerging new water developments

Goal 4 Administrative efficiency

Undertake preliminary scoping and seek funding to develop a new licensing and permitting platform that will meet the current and future needs and expectations of the community for the management of Tasmania's freshwater resources
Investigate options for improved coordination and data sharing between water entities for the efficient management of the State's freshwater resources
Consider updating and modernising existing databases so that they can provide an integrated platform to provide useful and easy to interpret information to underpin planning decisions and be used in more strategic development of the State's freshwater resources
Identify the suite of legislative reforms to enhance efficiency, consistency and effectiveness of the water management framework
Undertake a detailed review of water management fees following any legislative changes arising from the Rural Water Use Strategy

NEXT STEPS

This Position Paper has been made available for public comment. Comments received will inform the development of the Draft Rural Water Use Strategy. The Draft Strategy will also be exhibited for public comment in October 2020.

The final Rural Water Use Strategy document is due for completion by March 2021. The Strategy will set out the Government's forward agenda for rural water use to deliver sustainable outcomes for irrigators, rural communities and the environment, and maintain Tasmania's competitive advantages in a changing climate.

Figure 3 Timeline for the draft Rural Water Use Strategy

PART B – POSITION PAPER

This part of the document discusses opportunities for improvement within the four goals of the Rural Water Use Strategy which are:

- Sustainable management of Tasmania's freshwater resources in a changing climate
- Effective regulation, strong entitlements and planning
- Strategic development to maximise opportunities from freshwater resources
- Administrative efficiency

GOAL 1 Sustainable management of Tasmania's freshwater resources in a changing climate

Manage our freshwater assets to achieve sustainable outcomes for agricultural growth, the environment and rural communities in a changing climate

1.1 Valuing our freshwater resources

1.1.1 Issue

As surface water resources approach full allocation, the financial, social and environmental values of our freshwater resources will be more fully realised. It is important to ensure that the water management framework continues to provide for the diverse values of our freshwater resources to be realised.

1.1.2 Stakeholder views

Most stakeholders believed that water is currently undervalued in Tasmania because water is considered to be an abundant resource. However stakeholders also commented that it is becoming apparent that access to water is increasingly less reliable and people are appreciating what an important and valuable asset it is and how a water allocation increases the value of land.

1.1.3 Position

Tasmania is fortunate to be endowed with significant natural resources, including a relative abundance of freshwater. As a natural resource, freshwater is valuable in numerous ways. It is a vital resource to maintain human life with essential human consumption needs met through reticulated systems or by households accessing water resources on their own behalf. It is valuable as a cultural and recreational resource. As a necessary input in many commercial processes, including agricultural production, it is valuable from a commercial point of view. Freshwater is also vitally important in an environmental sense; supporting ecological processes and contributing to the maintenance of natural values.

The value of our freshwater resources is reflected in the prices individuals pay, or non-monetary arrangements individuals make in association with trading or transferring water allocations between themselves; the premiums paid for properties with water allocations; the rules set through water planning processes to protect ecological, environmental, consumptive and cultural water requirements; and water fees levied to manage the State's water resources.

Many of the opportunities for improvement identified within this position paper touch on or influence the financial, social and environmental values of Tasmania's freshwater resources.

1.2 Understanding our freshwater resources

1.2.1 Issue

Knowledge and understanding of our freshwater resources underpins their sustainable management. Changes that are occurring now, or are expected to occur in the future, require further development of our knowledge and understanding of our freshwater resources. For example:

- Increasingly, surface water resources within agricultural catchments are nearing full allocation;
- The effects of changing climate can be predicted to impact on catchment yields as well as on the timing and reliability of demand for and supply of water;
- Water delivery systems in some areas of the State have become more complex, with multiple water managers using streams to convey different water products to water users. This has increased the complexity of water management arrangements in some areas;
- As surface water catchments reach full allocation, and as we further experience a drying climate, demand for groundwater as an alternative or additional source of water for irrigation and other uses may increase.

Tasmania is renowned for its natural environment, and a healthy environment underpins the Tasmanian Brand and many of the competitive advantages enjoyed by agricultural producers.

A strong water management framework is essential to balancing commercial, environmental and social demands on our fresh water resources.

1.2.2 Stakeholder Views

Surface water

Stakeholders felt that the models used by the Department for surface water management and in particular, water availability, should be regularly updated with any information available reflecting changing climate (e.g. from the CSIRO or the Bureau of Meteorology) so that they are underpinned by the best available science. Some stakeholders also queried whether the models currently used, adequately reflect geographical differences between catchments. Similarly, some stakeholders queried whether there is adequate coverage of stream flow monitoring sites in relation to our ability to model streams, as well as our ability to manage access to water. Stakeholders also felt that gaining more information about water use was critical to having confidence in model predictions about future reliability of water allocations.

Understanding water use is discussed in detail in Section 1.4 of this Position Paper.

Groundwater

There was a common view among stakeholders that the State's knowledge and understanding of groundwater resources, groundwater use and groundwater interactions with surface water is rudimentary and should be improved.

Most stakeholders supported an increase in the knowledge and understanding of our groundwater resources, however few felt that increased regulation of groundwater use was necessary at this stage.

Stakeholders also considered that greater clarity about how groundwater is managed under the legislative framework would provide greater certainty to water users.

Environmental and ecosystem requirements

All stakeholders recognised and accepted the environment as a legitimate user of water as well as the requirement to maintain flows in rivers and streams to maintain ecological processes and healthy waterways. In many cases though, stakeholders had a poor understanding of how the water management framework provides water for the environment.

There was a repeating theme from stakeholders that "one size doesn't fit all", in that there is a great deal of diversity between catchments throughout the state and that a rule that works well in the north-east may not be relevant in the north-west. This comment was made in relation to both hydrological regimes and ecological requirements. There was widespread interest in identifying specific natural and community values in catchments and determining what the key flow requirements and management rules are in relation to those.

Some stakeholders were also concerned about the effects of changing climate on ecosystem resilience, water quality and river health. In particular, stakeholders identified the potential for more variable flow regimes and more frequent and intense high flow events combined with extended periods of low flows.

Water quality and river health

The importance of efficient, effective and sustainable use of both water and land was a consistent message from all stakeholders if the Government's Agrivision 2050 targets are to be achieved.

All stakeholders stressed the importance of maintaining good water quality for both the environment and for agricultural production. Many stakeholders were concerned that changing land-use practices are leading to elevated sediment and nutrient runoff to waterways, which in turn is degrading water quality and impacting on river health and other community values such as recreational fisheries.

1.2.3 Position

Surface water

Tasmania's surface water resources are generally well understood by the Department and the tools used for surface water allocation to date have proved to be reliable and adequate for well informed, consistent and transparent decision making.

However, as catchments reach full allocation and as the effects of changing climate impact catchment yields, there are key improvements that may be required to our understanding of the water resources as well as the way they are managed. Changing climate is likely to alter what we consider to be reliable access to water for consumptive uses as well as water for the environment.

Continuous improvement of our approach to modelling surface water availability is an ongoing challenge that requires:

- Incorporating the latest predictions of changing climate for Tasmania
- Revising our modelling approach to ensure that models are fit for purpose, reflecting regional geographical differences as required and as adequate information is available
- Recalibration of models once sufficient water use information is available and as required
- Review of the stream flow monitoring network to identify gaps and priority areas for changes to the network

Info Box 1

DPIPWE collects stream flow information from a network of approximately 90 streamflow monitoring stations. Data collected from these stations, as well as some managed by Hydro Tasmania and Tasmanian Irrigation, are used to support water management. This ensures that the consumptive use of water is in accordance with allocation provisions and that high surety rights (e.g. town water supply), Part 5 rights and environmental values are also maintained. This monitoring information is available through the Department's Water Information Tasmania Web Portal[3].

The Department currently assesses applications for water licences under the WMA on a case by case basis, with reference to the Surface Water Allocation Decision Framework. This framework requires an assessment of water availability in relation to any particular application. The Department uses the Water Assessment Tool (the WAT) to assess water availability. This tool is underpinned by rainfall-runoff models that cover the agricultural catchments of Tasmania.

[3] Water Information Tasmania Web Portal: https://dpipwe.tas.gov.au/water/water-data/water-information-tasmania-web-portal

Info Box 1 cont…

The WAT is a web-based tool that requires simple entry of a future dam or offtake location and returns potential water availability at a local, sub-catchment and catchment scale. The WAT compares allocation limits (which take into account environmental water requirements) with volumes of water currently allocated to determine whether additional water is available for allocation within a catchment. WAT uses a future dry climate scenario for rainfall, evaporation and hence runoff from the Tasmanian Sustainable Yields project of 2007.

WAT provides information to assess a total volume of water that can be allocated but does not provide information about daily volume access to water.

Groundwater

Historically, groundwater has made up less than 10% of water used for consumptive purposes in Tasmania (CSIRO, 2009). However, in some areas of the State, access to groundwater is commercially important, and in some cases it is the principle source of summer water for consumptive uses. In other areas across the State, groundwater inflows to rivers have been identified as the dominant contributor to summer river baseflows.

Ensuring that groundwater extraction does not adversely impact on water availability of other users or the maintenance of river baseflows or other ecosystems is of considerable importance. At present, the level of groundwater use throughout the majority of Tasmania is considered to be at a low risk level.

Info Box 2

The current arrangements for groundwater management in Tasmania are:

- Under Part 5 of the WMA groundwater may be taken without a licence. The WMA also provides for licensing of groundwater extractions where it has been determined that more intensive management of a groundwater resource is required. A licence to take groundwater is currently required in the Sassafras Wesley Vale Water Management Plan area. A licence to take groundwater is not currently required anywhere else in the State.
- Since 2009, groundwater bores or wells may only be drilled under the authority of a permit. Applications are assessed on a case by case basis. The issuing and return of permits (once the bore or well is established) is often the only occasion the Department collects and collates information on bore and well characteristics and yield and can be accessed through the GWIMS database[4].

[4] Groundwater Information Access Portal: https://wrt.tas.gov.au/groundwater-info/

Info Box 2 cont…

- A network of approximately 70 groundwater monitoring bores is currently maintained. DPIPWE endeavour to measure standing water level and basic water quality at these sites twice a year. Changes in standing water levels indicate a raising or lowering of the water table which reflects depletion/discharge and recharge of the resource. The groundwater monitoring network provides a coarse overview of the groundwater resource across Tasmania, however, the extent of the groundwater resource and its capacity to recharge is poorly understood in most areas.
- The Water Management Regulations 2019 were amended to include a provision that requires people to keep records and, when requested, provide information in relation to the taking of groundwater and the operation of a groundwater well.

Groundwater availability and use, aquifer properties and recharge across Tasmania is not well understood. While there is a network of monitoring bores, and the locations and details of drilled bores is regulated and documented, the Department has limited information on the success or on-going yield of the bores, the purpose for which the groundwater is used, or the amount of groundwater being taken. This poses challenges to the sustainable management of the groundwater resource.

Whilst groundwater dependent ecosystems (GDE's) have been characterised and documented through the Bureau of Meteorology GDE Atlas and the Conservation of Freshwater Ecosystem Values (CFEV) database, more work is needed to understand the linkages between surface water and groundwater in order to manage them in an integrated way. This type of information is important for better understanding risks associated with further development of groundwater resources for commercial consumptive use.

In 2017, Australian jurisdictions developed the National Groundwater Strategic Framework which provides a strategic ten year vision, focusing on priority objectives where action is required to sustain our groundwater resources and enable ongoing access to this increasingly valuable water resource. The strategic objectives are sustainable extraction and optimal use; providing investment confidence; planning and managing now for the future.

More needs to be done to strategically and sustainably manage our groundwater resources for the future, therefore the Department commenced the development of a Groundwater Risk Assessment and Management Framework to better understand potential risks and opportunities of the groundwater resource.

Environmental and ecosystem requirements

Environmental and ecosystem water requirements are provided through a number of mechanisms including consideration during individual water allocation decisions; access rules and allocation limits on water licences, and implementation of statutory water management plans and other access rules applied to water entitlements.

Info Box 3

Under the WMA, to receive approval for a water allocation on a licence, the application must be consistent with the objectives of the WMA. The Surface Water Allocation Decision Framework[5] (the Framework) and its supporting Guide set out how water is to be allocated as well as the assessments required to support any application. These include water set aside for environmental water provisions. The Framework ensures that the requirements of the WMA are met when water allocation decisions are made, by allocating water to protect environmental values as a matter of priority, with higher priority only given to the maintenance of stock and domestic, fire-fighting and town water supplies.

In addition to the environmental water provisions, formal environmental flow assessments have been conducted for 33 catchments across Tasmania[6]. These assessments recommend at least minimum environmental flows for each of the catchments. Some assessments include recommendations about environmental flow requirements during both low and high flows.

Formal environmental flow assessments have typically been undertaken in areas where there is greater competition for water resources. In these areas, the assessments have informed water management plans to guide the allocation of water and to provide local rules for managing water extractions to protect local ecological and environmental requirements.

Environmental flow assessments inform restriction and cease to take triggers outlined in statutory water management plans. Environmental flow assessments essentially describe the importance of different flows to the aquatic values of riverine systems. Environmental flow assessments are considered in the context of the community's environmental, economic and social objectives for the river(s).

A number of catchments are not covered by a formal environmental flow assessment. In catchments where this is the case and there is competition for water resources that may impact on the environment or on the fair distribution of water between entitlement holders, restriction triggers have been established.

Water quality and river health

The current condition of the majority of Tasmania's freshwater resources is suitable for consumptive uses.

[5] Surface Water Allocation Decision Framework:

https://dpipwe.tas.gov.au/Documents/Surface%20Water%20Allocation%20Decision%20Framework.pdf

[6] Environmental flow assessments: https://dpipwe.tas.gov.au/water/water-monitoring-and-assessment/surface-water-assessment/environmental-flow-assessments

Since 1994, DPIPWE has conducted broad-scale monitoring of river condition in Tasmania under the River Health Monitoring Program. It employs Australian River Assessment System (AusRivAS) protocols, which focus on macroinvertebrate communities and habitat quality.

The River Health Monitoring Program has monitored river health at 60 long-term monitoring sites across Tasmania, and additional sites in project areas, and provides baseline data on river health in the state. In addition, since 1994 AusRivAS sampling has been used by several agencies (e.g. DPIPWE, Hydro Tasmania, NRM regional bodies) and private consultants to assess river condition at more than 900 riverine sites in Tasmania. Collectively, this monitoring provides important datasets that can be used to address a range of questions about the health of rivers in Tasmania.

Proposals being considered

- Update surface water modelling to enhance information for decision making in a changing climate
- Undertake a strategic review of surface water networks, and where required, expand or upgrade the water resources monitoring network
- Consider knowledge gaps identified in the Groundwater Risk Assessment and Management Framework project and review the state-wide groundwater monitoring network to determine requirements to better manage groundwater resources
- Review the water allocation policy framework to ensure it considers best available science in a changing climate, continues to deliver outcomes in line with the objectives of the WMA, and enhances transparency of decision making. Continue the River Health Monitoring Program as part of the water management framework
- Continue the River Health Monitoring Program as part of the water management framework

1.3 Changing climate

1.3.1 Issue

Water underpins many of the commercial activities in the State and is critical to our energy security and the future of agriculture.

Changing climate is affecting Tasmania with changes in rainfall, temperature and evaporation occurring across the majority of the State, as well as changes to the incidence of extreme events.

The effects of changing climate can be expected to impact on catchment yields as well as changing the timing and reliability of demand for and supply of water.

Changing climate is likely to affect days of access to water in different ways in catchments across the State. Management regimes and the commercial use of water will need to adapt to address this variability.

1.3.2 Stakeholder views

Changing climate was seen by most stakeholders as both a risk and an opportunity. A warmer climate is likely to allow for the growing of new or different crops in areas of the State where they may not previously have been viable, but warmer temperatures are also likely to increase demand for water. More frequent and intense high rainfall events were also seen as an opportunity if appropriate storages are developed to capture this water.

Improving water user's understanding of the potential impacts of changing climate on water availability as well as opportunities in relation to changed and new agricultural enterprises was seen as critical to increasing agricultural productivity.

1.3.3 Position

The Tasmanian Government has set out priority actions to address the challenges of changing climate in its Climate Action 21: Tasmania's Climate Change Action Plan 2017-2021[7].

The Government has a strong commitment to irrigation development in Tasmania. Ongoing support for irrigation development is key to enabling Tasmanian farmers to manage the impacts of changing climate and increased climate variability.

The Department has a role in incorporating changing climate into its water management policies and ensuring that water is allocated and managed in a sustainable manner. It is also very important that licensees take changing climate into consideration when making their own water management decisions.

The NWI included assigning risks for changes in allocation which acknowledged that a balance must be struck between public and private risk-sharing in relation to changes to water availability resulting from policy or planning decisions or environmental factors such as changing climate. The Department's position on risk-sharing reflects the risk-sharing arrangements outlined by the NWI.

DPIPWE were part of the Tasmanian Sustainable Yields project (TasSY) as well as the Climate Futures for Tasmania (CFT) projects that were completed in 2009 and 2010. The projects

[7] http://www.dpac.tas.gov.au/divisions/climatechange/tasmanias_climate_change_action_plan_20172021

utilised the best knowledge of climate models and modelling practices of that time and have underpinned water management planning and allocation decisions since then.

The outputs from these models have been incorporated into DPIPWE's Water Assessment Tool (the WAT), which is used to determine water availability when considering applications for new water allocations. The tool adopts a conservative approach using the "c-dry" scenario (the driest scenario) and sets aside a percentile volume of potentially available water from allocation, effectively preserving this for the environment.

To ensure that water management and allocation decisions continue to provide for sustainable development, the Department is currently developing a methodology to update its surface water models with more recent climate change predictions, in collaboration with the Bureau of Meteorology.

Ecosystem resilience to changing climate is not well understood. More variable flow regimes and more frequent and intense high flow events combined with extended periods of low flows could significantly impact upon the composition of aquatic ecosystems and their functioning. This in turn could impact upon river health and water quality, limiting access to water for consumptive use.

Proposals being considered

- Update surface water models with more recent predictions of future climate
- Continue to share information, tools and work together with other government and non-government organisations to leverage projects to address the challenges of changing climate

1.4 Understanding water use

1.4.1 Issue

Competition for freshwater resources is expected to increase in the coming decades. As competition increases, it is likely that there will be a greater need to accurately collect information about water use to continue to ensure that the resources can be managed sustainably and equitably.

1.4.2 Stakeholder views

All stakeholders acknowledged that information about water use is critical for understanding and managing our freshwater resources. Many stakeholders were of the view that the Department is not collecting adequate information about water use. However, there were differences of opinion on how and where this information should be collected. Some

stakeholders felt that all licensed allocations should be metered and licence holders should be required to regularly report their usage. Others felt that metering is not always appropriate and practical and that in some cases water use could be determined through other means (for example by recording power consumption or cropped areas). Some felt that seasonal reporting on use would be adequate.

Two relevant issues that arose during stakeholder discussions were the potential for sleeper allocations, and the adequacy of current water use accountability to inform water allocation decisions.

There was a common concern that sleeper allocations (underutilised water allocations) could distort estimates of water availability and impact upon reliability of existing allocations when they become active. Stakeholders suggested that collection of water use information would enable the detection of such allocations and improve the modelling of water availability.

Other stakeholders suggested that more accurate modelling of flow regimes could be developed if there was reliable information on water use, and patterns of water use in particular.

Similarly, stakeholders suggested that an improved understanding of irrigation patterns and how users manage the range of different water products that are available would ultimately lead to improved and more effective management of the State's water resources.

Stakeholders were also interested in seeing greater accountability of groundwater use.

1.4.3 Position

The State administers, under the WMA, a system of water licences with allocations, which define the extent of rights to take water and conditions to which those rights are subject. A range of rights to take surface water and groundwater without a licence also apply under Part 5 of the Act.

Given that access is granted to take a public resource and use it for private benefit, and there are clear limits on the extent of rights granted and conditions to which they are subject, it is important that those who hold such a right are accountable for the water that they take.

As the value of water, investment in irrigated agriculture and the size of the water market continue to grow in Tasmania, and as management becomes more complex as different water products emerge, the need for accountability is increasing. Lack of accountability has the potential to undermine investment in the water sector if the security and certainty of water entitlements cannot be demonstrated.

Info Box 4

Four water sectors now operate in Tasmania:

1. Hydro-electric generation – principally Hydro Tasmania;
2. Urban water supply services – principally TasWater;
3. Irrigation schemes – water supplied to individuals under a system of irrigation rights Tasmanian Irrigation schemes and a number of locally managed schemes;
4. Rural water supply – individual farmers and other businesses taking water directly from rivers, streams or into storage in dams, under a water licence.

In the case of Hydro Tasmania, accountability is through its extensive and sophisticated array of water monitoring assets as required by the conditions of their Special Licence Agreement.

Water taken within the other three sectors is under authority of water licences issued under Part 6 of the WMA. The Tasmanian Water Accountability and Reporting Policy, 2014 sets out accountability and reporting obligations for all water licence holders. The overarching principles of the policy are:

- All water taken from the State's water resources, under a water allocation, must be accounted for in relation to that allocation and any conditions it may be subject to.
- The method used to account for water taken should be fit-for-purpose, cost-effective and based on a risk management approach.

The water accountability and reporting policy is supported by the Rural Water Meter Policy, the Rural Water Meter Decision Framework and the Tasmanian Meter Standards[8]. The metering policy and framework set out a risk-based approach to decisions about whether meters are required. In catchments where the Department has assessed risks associated with water use are elevated, metering of the taking of water has been required on licences.

All licence holders are required by the Water Management Regulations 2019, to keep records of water taken for a period of five years. The Regulations also require licence holders to provide those records to the Department if they are requested to do so. In addition, a person taking groundwater must also keep records and report as required.

To date, there has been limited collection of water use information. Where the Department has collected water use information, this has mainly been undertaken as part of targeted

[8] Accounting for water

https://dpipwe.tas.gov.au/water/water-licences/accounting-for-your-water
https://dpipwe.tas.gov.au/water/water-licences/water-meters

programs for specific water management purposes. Additionally, there is no dedicated database for storing and reporting on water use information.

Better accounting water conveyance is also emerging as an area that requires attention as water supply systems become more complex and water becomes a more scarce resource. In some cases water is conveyed within watercourses by water management entities such as irrigation scheme operators. In other cases water is conveyed from where it has been taken and stored by individual licence holders, to where they intend to use the water, or to other downstream licence holders where individuals have made an arrangement to supply water. Conveyance of water must be permitted by way of a Watercourse Authority under the current legislative arrangements.

Whilst information is collected about water conveyance in the Watercourse Authority permitting process, improved processes and mechanisms to properly account for water conveyance, including the keeping of records, would improve water management outcomes. There are also likely to be benefits to all water users within a catchment arising from timely reporting of water conveyance by Watercourse Authority holders.

Strong accountability measures are an important foundation for having confidence in the water management framework generally, as well as underpinning a robust system of water entitlements. There is opportunity to improve the way that Tasmania's water accountability policy is implemented. An additional step is to strengthen water measurement and reporting systems in Tasmania, having regard to an overarching risk-based framework.

Proposals being considered

- Review water accountability and reporting frameworks to strengthen risk-based water use and water conveyance measurement and reporting

GOAL 2 Effective regulation, strong entitlements and planning

Deliver water security for farmers, irrigators and other consumptive water users

2.1 Allocation of water

2.1.1 Issue

Tasmania is in the fortunate position of not having over-allocated water resources. However, a range of emerging challenges and opportunities are on the horizon including:

- Surface water resources available at Surety Levels 5 and 6 are generally considered to be fully allocated during summer and in some catchments winter allocations at these surety levels have also reached full allocation, or are approaching full allocation.
- Currently, in areas where sustainable allocation limits are nearing full allocation, applications have been made for large volumes of water without any demonstrated means to store, or in some cases, use the water.
- Enhancing opportunities for individuals to capture water when it is in abundance through developing innovative water infrastructure to respond to climate variability may better enable growth in the agricultural sector.
- Changes to irrigation practices have been observed with water now being taken as early as September and October, well before the traditionally recognised irrigation season. Climate change may further alter traditional farming 'seasons'. This may be relevant to efficient allocation of water which is currently allocated on a seasonal basis, reflecting historical irrigations seasons.

2.1.2 Stakeholder views

Addressing catchments nearing full allocation

Stakeholders were particularly concerned with ensuring that water entitlements remain strong and are not undermined by future water allocation decisions.

Accessing water during high flows

Some stakeholders were interested in improving how water may be accessed in times of plenty, including during high flows.

Stored water and the security that it provides to agriculture was recognised by all stakeholders with many suggesting that the water management framework should enable the capture and

storage of water from high flow events at any time of the year. Some stakeholders suggested that to make the most of high flow events and storage opportunities, siting of gauging stations or other monitoring sites higher up in catchments is important, so that high flow events could be identified sooner. It was also suggested that in the absence of such additional gauging stations, high flow events could be identified sooner through greater involvement of local communities in water management decisions.

Developing rules around accessing water during high flow events was seen as an opportunity to optimise the capture and storage of water whilst ensuring that appropriate triggers and water accounting is in place to protect the environment as well as the rights of downstream water users.

Some stakeholders also expressed an interest in being able to develop storages in areas of low reliability water supply. It was suggested that the water management framework should provide for dams to be built in areas where they may only fill every second or third year with their operational design specified to only use a portion of the stored water each year.

Annual vs seasonal allocations

There was also discussion about whether adopting a management system with annual allocations rather than the current seasonal approach (summer and winter) may provide greater flexibility to users to access their allocation when they need it rather than be confined to their current licenced take period.

2.1.3 Position

Addressing catchments nearing full allocation

In Tasmania, water is currently allocated on a seasonal basis (i.e. either winter take or summer take) with a specified 'Surety Level' which indicates priority of access. There are eight Surety Levels against which water has been allocated (see Table 1). Surety Level 1 is the highest level of surety.

Allocation limits have been set through historical water allocation projects such as the Water Use Sustainability Project (WUSP) and the Water Use Availability Project (WUAP); statutory water management plans, or through the Surface Water Allocation Decision Framework.

Table 1 Surety Levels

Surety Level	Description
Surety Level 1	Water for domestic purposes public health purposes and consumption by livestock or firefighting
Surety Level 2	Water to sustain ecosystems dependent on the water resource
Surety Level 3	Water access entitlements replacing Prescriptive Rights granted under previous Acts.
Surety Level 4	Water access entitlements granted via a Special Licence for the purposes of generating hydro electricity
Surety Level 5	Water for commercial purposes and non-essential town water supplies by either direct take or take into storage
Surety Level 6	Water for commercial purposes at a lower level of reliability than Surety Level 5
Surety Level 7	Water for commercial purposes with specified management 'access' triggers for ensuring environmental passing flows and rights of existing users are not adversely impacted
Surety Level 8	Water for commercial purposes during high flows only within Hydro-electric Districts

Info Box 5

The Surface Water Allocation Decision Framework sets out the rules applied when assessing applications for new water allocations on a first come first served basis. The Surface Water Decision Framework relies on the Water Assessment Tool (the WAT) to assess water availability for Surety Level 5 and 6 allocations. The WAT is underpinned by rainfall-runoff models that take into account future climate change predictions.

Under the framework, water is preserved for the environment, then any existing water entitlements are protected, before making provision for any additional allocations.

Surety Level 7 allocations are assessed on a case by case basis and require a substantial body of evidence to be submitted with the application. These allocations allow water to be taken subject to conditions which specify access triggers to be satisfied to ensure the maintenance of key environmental processes as well as reducing the risk of adversely impacting existing water rights.

Surety Level 8 allocations have been allocated where access to high flows has been negotiated with Hydro Tasmania to allow water to be taken when Hydro dams are spilling or the taking of the water is unlikely to impact upon Hydro Tasmania's capacity to generate electricity.

The development of a position outlining when and how further allocation of surface water in a catchment will be allocated is becoming increasingly important to ensure transparency in decision making and continue to ensure that the allocation of surface water is fair, equitable and in the best interest of growing the Tasmanian economy.

Additionally, providing the public with greater access to information on water allocation limits and the volume of surface water remaining for allocation would enable water users to make more informed decisions regarding potential water availability in catchments without having to refer to the Department for this information.

Importantly, when a catchment is determined to have no additional surface water available to be allocated, trading of existing allocations or stored water is available to support the development of new enterprises and is likely to increase the value of existing water allocations. A mechanism to formally advise that a catchment is fully allocated should also be considered to ensure clear signals are conveyed about water availability.

Accessing water during high flows

In some catchments there is potential to allocate low reliability water through Surety Level 7 and Surety Level 8 allocations. Additionally, in some areas covered by statutory water

management plans, 'Opportunistic Take' of water is also provided to licence holders when specified high flow thresholds are met.

Greater transparency around these arrangements and other opportunities to allocate low reliability water would be benefitted through a review of relevant surface water allocation decision policies. This will be of particular interest in some East Coast and Midland catchments with ephemeral characteristics resulting in water flows that are flashy and unreliable.

Annual vs seasonal allocations

Introducing annual allocations is one possible response to this observed change in seasonal irrigation behaviour. An alternative response could be to enhance the flexibility of licenses and allocations to better allow for market based mechanisms to be used by individuals to cover their changing needs.

Proposals being considered

- Review the water allocation policy framework to ensure it considers best available science in a changing climate, continues to deliver outcomes in line with the objectives of the WMA, and enhances transparency of decision making.
- Explore options to enhance flexibility for irrigators to manage allocations responsively
- Explore options to enable greater visibility of allocations and water availability in catchments

2.2 Simplifying statutory water management planning

2.2.1 Issue

Over the years, water management planning in Tasmania has evolved and now better reflects risk-based decision making. Ensuring that the legislative framework continues to provide the best mechanisms for an adaptive, risk-based planning system to manage the State's water resources is key.

2.2.2 Stakeholder Views

Whilst most stakeholders commented that statutory water management plans were providing an effective tool to manage water resources, some commented that plans could be simplified so that they are easier to use and understand.

There were also suggestions to clarify roles and responsibilities within the WMA in relation to water management planning, including the role of the Tasmanian Planning Commission.

2.2.3 Position

The process to develop statutory Water Management Plans was first introduced in 2000 with the commencement of the WMA, and some amendments to the process were made in 2004.

Info Box 6

The Department applies a risk-based approach to water planning. This risk-based approach recognises that water planning is required in a range of water resource scenarios in order to achieve the objectives of the WMA; however, statutory management plans may not be warranted in all cases. Statutory water management plans are prepared where there is economic, social or environmental complexity associated with water resource management decisions. The process also has intensive community input and scientific investigation in order to achieve an acceptable balance in these more complex water management settings. The preparation of statutory water management plans are resource intensive and can take some years to develop.

In situations where there is a need for catchment specific water planning documentation but there is less complexity associated with water resource management decisions, the Department has been developing Water Management Statements. Water Management Statements describe how the legislative provisions of the WMA and the policies of the Department are applied in relation to water management for a specified water resource. Water Management Statements are not statutory instruments and are not referred to in the WMA.

The risk-based approach adopted by the Department enables the objectives of the WMA to be met in an efficient and timely way that is proportionate to the water management issues being considered.

In 2018, the Department revised its Guiding Principles for Water Management Planning to improve the statutory planning process. When the Guiding Principles were revised, it was recognised that a simpler structure for water management plans was required so that they are easier to use and understand. The simpler, revised structure of plans is being worked through during the development of future water management plans, in consultation with relevant stakeholders.

In addition, at the National level, under the National Water Initiative, enhancing Indigenous people's engagement in water planning has been identified as a priority issue. In 2017, policy guidelines were developed under the NWI to provide guidance on engaging Indigenous peoples in water planning and management. A key focus of these guidelines is improving

Indigenous water access in water plans for both cultural and economic purposes. Tasmania is a signatory to the National Water Initiative and will investigate how Indigenous access to water can be facilitated.

Water management planning should be adaptive and responsive to water management issues as they emerge. A review of the water management provisions of the WMA would assess whether the legislative framework best provides for contemporary risk-based water management planning that is timely, adaptive and responsive, and identify changes to improve the efficiency and effectiveness of development and review processes for water management plans.

Proposals being considered

- Revise the legislative framework underpinning risk-based water management planning
- Ensure that Indigenous people have the opportunity to be engaged in water planning in Tasmania

2.3 Local involvement in water management

2.3.1 Issue

All rights to the taking of water from the water resources of Tasmania are vested in the Crown, with the exception of those rights provided by the WMA and rights in respect of water under Part 5 of the WMA. The Minister for Primary Industries and Water is responsible for administering the WMA including, but not limited to, the licensing, allocation and management of water. Notwithstanding the responsibilities of the Minister, water users are also responsible for taking water in accordance with their licence conditions, their obligations under the WMA and other relevant legislation.

The Department regularly seeks the input of relevant stakeholders into the design of water management arrangements. Enhancing opportunities for collaborative water management with local people provides for adaptive and innovative solutions to complex water management issues.

2.3.2 Stakeholder views

The majority of stakeholders thought there were benefits to be gained from increasing involvement of local users and communities in local water management decisions. This was based on the community's familiarity with and understanding of how their local rivers behave. It was felt that the Department commonly overlooked this experience and failed to take

advantage of this wealth of knowledge and understanding. The opportunities for involvement ranged from rostering of irrigation or flow sharing between users to minimise impacts upon base flows in the river, to local detection and announcement of high flow events.

2.3.3 Position

The Department endeavours to undertake targeted and timely consultation with relevant stakeholders when developing or revising key policies or water management planning tools. At a strategic level, the Department aims to consult with interested stakeholders when developing new policies and strategies or undertaking legislative reform. At a more local level, the Department consults with stakeholders during the development of statutory water management plans and water management statements.

The Department has also been working in some catchments to support the development of collaborative water management arrangements with water users. Under these collaborative arrangements, the Department sets rules such as restriction and cease to take triggers for water extractions, and the local water users take on greater responsibility to optimise extractions by coordinating their water use through rostering or other arrangements that they develop. Additionally, the groups may be consulted on water management issues. The Department supports these water user groups as the regulator of the resource. The Department informs the group when a restriction or cease to take trigger is being approached. It is then up to the group to determine what response water users will take if they wish to try to maintain flows above the trigger level. When restriction or cease to take triggers are reached, water users are required to abide by their applicable licence provisions. For example, if a cease to take trigger is reached, licence holders must cease to take water from the river.

Ultimately, membership of these water user groups is voluntary and the group is not compelled to exist, nor individual group members to adhere to group decisions.

These types of arrangements enable individuals to cooperate to achieve their own outcomes as determined by them, within the bounds of the regulatory framework, in this case, the WMA. Currently no formal policy regarding these types of arrangements exists. There is benefit in considering how best to provide water user groups with a consistent operating framework to ensure that there is clarity and transparency about roles, responsibilities and communication.

Any changes to enable greater local involvement in water management will need to accommodate the variability of different catchments and their communities, and allow for flexibility as different groups are likely to have differing degrees of interest or ability to take on these types of responsibilities.

Proposals being considered

- Further enhance options available for developing collaborative water management arrangements
- Develop an operating framework for local water user groups

2.4 Water markets

2.4.1 Issue

Developing water markets has been a key element of water reform in Australia under the National Water Initiative. An effective water trading market can provide greater flexibility for individual water users and assist in ensuring that we make optimum use of our limited water resources. Being able to buy and sell water entitlements where limits on new water allocations have been reached can provide opportunities for new enterprises to access water as well as expand activities. Water markets can give individual irrigators an additional tool to manage water availability risk and increase flexibility in water and production decisions. This can help irrigators to respond to external factors such as drought and changes in input prices, commodity market conditions and their individual business and personal objectives.

In other parts of Australia water markets allow participants to source water to meet their short-term needs (e.g. expanding production, finishing a crop or selling excess water allocation) or addressing long-term needs or risks (e.g. changing production or crop types, managing long term water availability risks). Other groups who trade in water markets include irrigation infrastructure operators, urban water authorities, environmental water holders, water brokers and exchanges, investors, and others.

To date, limited water trading has occurred in Tasmania and the market-place tends to be spatially disconnected as a result of the relatively small water catchments in the State. The main use of transfer mechanisms provided for by the WMA are the transfer of water licenses and allocations with the sale of property. Aside from these transfers, stakeholders reported that water entitlements are more commonly transferred between users without a financial transaction taking place and without registration with the Department. It is also evident that Watercourse Authorities are increasingly being used to enable the transfer of water through natural watercourses from dams where water has been taken and stored, to areas where it is needed for irrigation. Parties to these transfers may or may not enter into financial transactions and there is no requirement for information about financial transactions to be reported to the Department.

Trade in irrigation rights within irrigation districts operated by Tasmanian Irrigation is occurring. Within existing Tasmanian Irrigation schemes, 7% by volume of irrigation right

entitlements were subject to short term transfers and 4% were subject to permanent transfers in the 2018-19 financial year.

2.4.2 Stakeholder views

All stakeholders supported the concept of available water moving to where it would generate the best return in relation to agricultural production. However, many stakeholders did not see water trading as a high priority and were satisfied that the current framework provided for more informal options for transferring water by way of a Watercourse Authority. Some stakeholders had reservations about water trading on the basis that it could result in speculators reducing the volume of water available for use and driving up the price of water. Stakeholders were keen to ensure that any development of a water market in Tasmania would have measures in place to limit opportunities for well-funded external parties to invest in water to the potential detriment of local users. Stakeholders were keen to ensure that as much water as possible is made available for productive use.

Many stakeholders believed that water is currently undervalued in Tasmania because water has been seen as an abundant resource. Stakeholders reflected that this is now changing, citing that access to water is increasingly less reliable; as well as a growing awareness that water allocations are an important and valuable asset. Stakeholders acknowledged that having a water allocation increases the value of land.

Most stakeholders also recognised that it is important that the Department is aware of transfers of water allocations and trades of water in order to ensure that water users have a legal right to take water. However, stakeholders, in particular, water users, were keen to minimise regulation in this area. Currently, the Department's ability to effectively regulate trade and transfer of water allocations in an integrated way is limited and should be improved to benefit users, the environment and the management of the resource.

2.4.3 Position

The trading of water access entitlements, as well as water itself, became possible in Tasmania with the introduction of the *Water Management Act 1999*. Water trading is also supported by Water Resources Policy #2003/2, 'Guiding Principles for Water Trading in Tasmania', published in 2004[9]. The water trading policy applies to trading water allocations of licences issued under Part 6 of the WMA. In addition to trading in these allocations, it is also possible to trade irrigation rights within irrigation districts such as those administered by Tasmanian Irrigation.

[9] https://dpipwe.tas.gov.au/water/water-legislation-policies-and-strategies/water-resources-policies-and-guidelines

Info Box 7

Rights to take water exist in a variety of forms in Tasmania. Some of these rights may be transferred (traded). These include:

- Rights to take water with authority of a licence issued under Part 6 of the WMA
- Irrigation rights within Tasmanian Irrigation schemes or within other irrigation districts
- Rights transferred from Hydro Tasmania within Hydro-electric Districts to the Minister for Water and issued as water allocations of Part 6 licenses

Some rights may be more difficult to trade such as rights transferred from Hydro Tasmania within Hydro-electric Districts under direct agreements between Hydro Tasmania and third parties.

Trading in licenses and allocations issued under Part 6 of the WMA is provided for by the WMA. Trading in irrigation rights within irrigation districts is provided for by the *Irrigation Clauses Act 1973*.

In addition to provisions for trading in the rights to take water, the WMA provides for water that has been taken into storages such as dams, to be transferred to another user by way of a Watercourse Authority.

From a legislative and policy perspective, Tasmania has made trading in water entitlements possible. Many of the settings that allow for efficient markets to emerge and operate efficiently revolve around information being available. A number of the proposed actions listed elsewhere in this Position Paper will improve the availability of information to better inform trading and transfer of water entitlements, as well as regulation of emerging water markets in Tasmania. The following mechanisms could be considered in the Tasmanian context to enhance water market development:

- Review policy settings for water trading, including both allocations of water licences, and irrigation rights
- Consider legislative and administrative reforms to better support water market development
- Consider regulatory approaches to limit speculative behaviour in water markets
- Enhance water use accountability
- Better communicate access rules and cease to take thresholds, as well as make information on allocations, trade and transfers more readily available
- Provide reliable and accurate information on water use and allocations

Proposals being considered

- Review policy settings for water trading
- Consider legislative and administrative reforms as well as information systems to provide relevant information and register water trades to better support water market development

2.5 Issues raised in relation to dams for irrigation uses

2.5.1 Issue

Dams and water storages are essential for ongoing agricultural development. While Tasmania has historically had an abundance of water, it falls predominantly in the winter months with less available during the warmer growing season. Additionally, having water in storage at the beginning of the irrigation season gives farmers greater certainty as to their water availability and allows them to better plan their cropping regimes.

The Department regulates the development, operation and maintenance of dams to optimise opportunities to capture water while minimising the impact of dams upon flow regimes and water dependent ecosystems, as well as ensuring that safety is to a contemporary standard.

2.5.2 Stakeholder views

Application of the ANCOLD Guidelines

Some stakeholders requested that consideration be given to developing an alternative to the Australian National Committee on Large Dams (ANCOLD) guidelines for those farm dams which pose a low safety risk. It was the view of some stakeholders that the ANCOLD guidelines impose excessive and/or unwarranted burdens for these types of dams.

Changes to dam safety rating resulting from downstream land use change

An additional concern raised by some stakeholders was that changes in land use such as subdivision for residential land downstream of an existing private dam could result in a change to the dam safety rating. This could result in additional engineering and administrative burdens being imposed on the dam owner.

Changing climate and dam safety

One stakeholder voiced concern about the potential impact of climate change on dam safety with predictions of more frequent and more intense high rainfall events. Their concern was that this may result in some spillways in existing dams being inadequate to pass flood flows, increasing the risk of a dam overtopping and potentially failing with subsequent impacts upon

the farming business and the environment. It was also suggested that owners of dams should be required to contribute to a financial assurance fund to cover remediation costs of any dam failures or rehabilitation cost following decommissioning of a dam.

Catchment dams

One stakeholder suggested that catchment dams (i.e. dams that capture and store dispersed overland run-off) should require an allocation as they were concerned that this water is removed from the available water and new dams could erode the security and reliability of water for existing users.

The dam permitting process

Other stakeholders expressed concern that the assessment process for dams was too limited in that the focus of the assessment was on potential impacts within the immediate footprint of the proposed works rather than on broader impacts at the catchment scale. The key concerns raised related to consideration of landuse changes resulting from farm enterprises having access to additional water for agricultural production, such as clearing of land for agriculture; and the potential for cumulative impacts of dam approvals upon the movement of water, sediment and aquatic fauna.

2.5.3 Position

Application of the ANCOLD Guidelines

Tasmania applies the Australian National Committee on Large Dams (ANCOLD) guidelines to a range of activities relating to design, construction and decommissioning and dam safety and emergency as specified in the Water Management (Safety of Dams) Regulations 2015. While the Government acknowledges that many of the ANCOLD guidelines have been developed for large, potentially high risk dams, the principles applied to minimise risk to both the public and the dam owner still apply. The Government amended the WMA in 2015 to provide a new assessment process for farm dams that pose a lower risk to the environment and public safety. These changes reduce the requirements for information for these lower risk dams. However, Tasmania would benefit from undertaking a review of how low-risk dams are managed to further minimise the imposition of onerous and financial requirements.

Changes to dam safety rating resulting from downstream land use change

As noted, there is potential for changes in land use such as subdivision for residential land downstream of an existing private dam to result in a change to the dam safety rating. This could result in additional engineering and administrative burdens being imposed on the dam owner.

Whilst land use planning is outside the scope of the Rural Water Use Strategy, ensuring that the administrative arrangements of the water management framework are fit for purpose and do not impose an unwarranted burden on persons is within scope.

Dams must be managed in a way that ensures their adequate safety regardless of the origin of any increased risk. The current regulatory settings for dam safety ensure the safety of dams.

The key issue is who is responsible for any increased risk associated with a downstream development. Under land use planning arrangements administrated by local government, dam owners have the opportunity to make representations for themselves in relation to proposed downstream land use changes.

The Department will work with industry and the Local Government Association of Tasmania to enhance the knowledge and understanding of the potential for downstream developments to cause changes to upstream dam risk ratings and to ensure that these potential changes are adequately considered in the planning process for new developments.

Changing climate and dam safety

The potential impacts of climate change causing increased frequency and intensity of high rainfall events poses both opportunities and risks to dam owners. In some cases there may be an increased risk of high flow events exceeding the capacity of spillways resulting in dams overtopping and potentially failing. However, the application of the ANCOLD guidelines in relation to spillway capacities has ensured that conservative requirements have been placed on the spillway designs for all permitted dams in Tasmania to minimise such risks. While this may not prevent dams from overtopping, the majority of higher risk dams should have spillways designed to deal with most foreseeable events.

In relation to comments made about requiring a financial assurance fund for dams, there is currently no sufficient benefit to be gained by the application of such a model for dam safety. The assessment process around the construction of higher risk dams is extensive with more rigorous engineering input and oversight required as the consequence category increases. The Tasmanian approach has been for the risk to be borne by the dam owner and for them to bear all responsibility for the maintenance of a safe dam. The WMA provides the Minister with powers to require a dam owner to undertake works necessary to ensure the ongoing safety of the dam. If the owner fails to comply then the Minister may authorise a person to undertake the required action and subsequently the Minister may recover any expenses incurred from the dam owner.

Catchment dams

Under Part 5 of the WMA, a person may take dispersed water from the land without a licence. There are numerous catchment dams throughout the Tasmanian landscape which take dispersed water from the land. The vast majority are small and used for stock watering. While there are some catchment dams that are larger and intended to take water for irrigation these

are relatively few. At this stage it is considered that the current approach to regulating catchment dams and access for stock and domestic use strikes an appropriate balance.

The dam permitting process

The assessment process for new dams is rigorous and scaled to the risk profile of a dam as it relates to risk to public safety, the environment and other users of the water resource. The Dam Works Assessment Decision Framework sets out the assessments required in support of a dam application to ensure that the requirements of the WMA are met. These include assessment of the potential for the proposed dam to impact on public safety, the environment and other users of the water resource.

Additionally, downstream impacts of a dam, can also be managed either through a dam operating notice which can stipulate how the dam must be operated or through conditions placed on water allocations associated with the dam.

Catchment management issues such as land use changes are not within the scope of the Rural Water Use Strategy.

Proposals being considered

- Investigate alternatives to ANCOLD for smaller private dams
- Work with industry and the Local Government Association of Tasmania to enhance the knowledge and understanding of the potential for downstream developments to cause changes to upstream dam risk ratings and to ensure that these potential changes are adequately considered in the planning process for new developments

2.6 Management of Irrigation Schemes

2.6.1 Issue

Tasmania has a long history of developing irrigation schemes. In some areas, irrigation schemes were established many decades ago and the management of these schemes rests with the owners of the schemes, often landowners within a scheme area. In the last 15 years there has been significant and rapid public investment in irrigation scheme infrastructure. Alongside this public investment, there has been significant private investment in purchasing water entitlements from the schemes as well as in on-farm irrigation infrastructure.

The administration and operation of irrigation districts has evolved substantially since the *Irrigation Clauses Act 1973* (ICA) was first introduced. Newer districts are administered and operated in a much more sophisticated way, though at the same time, there are a number of

districts still operating in a manner more akin to that provided for when the ICA was introduced. The existing legislation was never intended to deal with the type and nature of irrigation districts and schemes that are now emerging. The legislation has been stretched in dealing with the contemporary circumstances relating to water districts and the emerging potential for self-management of publicly owned schemes where practicable and feasible.

2.6.2 Stakeholder views

Stakeholders almost universally agreed that the irrigation schemes developed by Tasmanian Irrigation (TI) in the last 15 years have provided very significant benefits for the state. The security they provide in relation to reliable access to water is considered invaluable.

There are some irrigation schemes currently operated by Tasmanian Irrigation where there is significant interest amongst irrigation right holders in increasing their level of involvement in the day to day management of those schemes.

2.6.3 Position

The Government has an established policy position of not privatising publicly owned assets or infrastructure, but facilitating self-management of such irrigation schemes where practicable and feasible. Whilst most stakeholders recognised that ownership of the scheme assets should remain with the government given the significant public investment in the scheme, there has been some interest from stakeholders to take on some of the operational responsibilities in some schemes. Any changes though, must recognise and cater for a variety of options as there will be differing levels of interest and capacity to take on the management responsibilities.

In developing options for self-management a range of factors come into play including the need to ensure the long-term viability of the scheme infrastructure, providing for the appropriate ongoing level of monitoring and reporting and facilitating greater local administration and involvement in the management of local systems. Facilitating greater local involvement will need to consider changes to the current framework set out by the *Water Management Act 1999*, the *Irrigation Clauses Act 1973* (ICA) and the *Irrigation Company Act 2011*.

Additionally, modernising the administrative arrangements for the establishment and operation of irrigation districts should be considered. The administration and operation of irrigation districts has evolved substantially since the ICA was first introduced and the ICA was never intended to deal with complex, large-scale irrigation schemes such as those now in operation.

Legislative reforms to enhance administration and operation of irrigation districts in Tasmania, and provide greater certainty for investment in irrigation infrastructure need to be considered further.

Proposals being considered

- Undertake reforms to enhance administration and operation of irrigation districts
- Establish arrangements to better facilitate efficient and effective water management in catchments with multiple water managers

GOAL 3 Strategic development to maximise opportunities from freshwater resources

Innovate our management of water resources to grow the Tasmanian economy

3.1 Irrigation Infrastructure Development

3.1.1 Issue

The Government has a strong commitment to irrigation development in Tasmania. Tasmanian Irrigation schemes have made highly reliable water supplies available for growth in agriculture which has a number of benefits for farming businesses in terms of commercial certainty and security; flexibility and risk management in irrigation water requirements; and providing for farm business restructuring and modernisation.

Ongoing support for irrigation development is also key to enabling Tasmanian farmers to manage the impacts of climate change and increased climate variability.

3.1.2 Stakeholder view

Stakeholders recognised that making the most of strategic water development opportunities needs to be made in the context of changing climate and water availability patterns. Some stakeholders commented that there has been significant investment in irrigation scheme development that has not been matched with investment in the delivery of on-ground services to support new irrigators to optimise irrigation application and minimise land and soil impacts. These stakeholders commented that to ensure the full benefits from strategic water developments are maximised, on-farm management through extension, education and peer to peer learning needs to be more broadly undertaken. In addition, a number of stakeholders commented that Regional Land Use Planning needs to ensure the benefits from water as an enabler for agricultural growth is maximised by ensuring strategic development of agricultural land using enterprise suitability and land capability maps and other data sets to underpin water infrastructure developments, including taking into account the social and environmental requirements and expectations of the community. Whilst these issues are important, they are outside the scope of the Rural Water Use Strategy project.

3.1.3 Position

Tasmania has a long history of irrigated agriculture. Irrigated land is estimated to produce more than 10 times the value per hectare compared with improved agricultural land that is not irrigated. There has been a transformation in Tasmanian agriculture over the last 15 years

as a result of regional, large-scale irrigation development managed by Tasmanian Irrigation. It has also been supported through private investment in irrigation schemes and on-farm investment.

Info Box 8

In 2017-18, 100,105 hectares were irrigated and the gross value of irrigated agricultural production was $989 million. While only 8% of land used primarily for agricultural production was irrigated, it produced 52% of the gross value of Tasmania's agricultural production. Irrigated area has been trending upwards over the past ten years. This includes a 30% increase in the area of irrigated pasture, fodder and broadacre crops, largely enabled by new schemes in Tasmania's Midlands region. The availability of high security water has allowed famers and businesses to invest with certainty in the production of higher value crops.

Government policy during the past decade has led to the development of a highly successful public-private partnership approach to irrigation development in Tasmania. This partnership and capital investment between the Australian Government, Tasmanian Government and farmers has been the vital and successful element of irrigation development in Tasmania during the past decade.

Increasing timely and secure access to water is crucial to boosting the productivity of the agriculture sector in line with the 2050 AgriVision target, as well as addressing the challenges of a changing and more variable climate. Fifteen irrigation schemes have been established since 2006 with a sixteenth scheme due to become operational in 2020. Together these schemes will have the capacity to deliver over 130,000 megalitres (ML) of water to Tasmanian farms each year.

The Tasmanian Government is progressing a third tranche of irrigation scheme developments through the Pipeline to Prosperity program. The program aims to deliver a further 10 irrigation projects in the agricultural areas of Tasmania, in the order of 80,000 ML of irrigation water at an estimated capital cost of around half a billion dollars. It is expected that at least 25 per cent of the capital cost of constructing the Pipeline to Prosperity projects will be contributed by the private sector. Government funding will be needed for the balance.

Phase one of the Pipeline to Prosperity Program is underway. The Australian Government has already committed $100 million to fund the first phase of the program, along with a Tasmanian Government commitment of $70 million. In order to deliver the whole of the Pipeline to Prosperity program, significant additional Australian Government and Tasmanian Government funding will be required.

Government supports on-farm water management through its investment in and involvement with the Tasmanian Institute of Agriculture (TIA) who undertake extension and education, and facilitate peer to peer learning.

Proposals being considered

- Continue to progress Tranche 3 of irrigation scheme development in partnership with investment from irrigators and the Australian Government

3.2 Battery of the Nation

3.2.1 Issue

Tasmania has significant potential in the future development of wind and hydropower, coupled with more transmission and interconnection. It is anticipated that these developments will drive billions of dollars in investment and create thousands of jobs in Tasmania in the next 10 to 15 years, as well as delivering energy security for Tasmania and lowest possible power prices for Tasmanians.

Battery of the Nation is about investigating and developing a pathway of future development opportunities in hydropower system expansion including pumped hydro.

Hydro Tasmania is leading work on hydropower system improvements, new pumped hydro opportunities and future market analysis.

Ensuring that ongoing investment continues to be supported by a clear and robust system of rights and obligations may enhance the attractiveness of these projects to potential investment.

3.2.2 Stakeholder view

Some stakeholders voiced apprehension about the potential impact of the Battery of the Nation initiative on water availability for irrigation and other commercial users as well as potentially upon the environment.

3.2.3 Position

Under the WMA, Hydro Tasmania has the rights to take and use water within Hydro-electric Districts for the generation of hydro-electricity. This makes Hydro Tasmania an important manager of a significant portion of the State's freshwater resources. The use of water by Hydro Tasmania for hydro-electric generation is non-consumptive and potentially available for subsequent use for consumptive purposes in the rural water sector. Hydro Tasmania holds a Special Water Licence under the WMA, which is supported by a Special Licence Agreement and historic rights that were established under a range of historical legislative obligations.

Under its Special Licence Agreement, Hydro Tasmania may transfer all or any part of its rights to take water within specified Hydro-electric Districts. Hydro Tasmania has transferred water in many hydro-electric districts for consumptive uses including irrigation at both the private and irrigation scheme level. A number of mechanisms exist under which water has been transferred. These include:

- Water transferred from Hydro Tasmania to the Minister for Water, and subsequent licensing of water entitlements under Part 6 of the WMA;
- Water transferred by way of direct agreement between Hydro Tasmania and another party, either permanently or for a limited term;
- Water supplied under provisions in the *Electricity Supply Industry Restructuring (Savings and Transitional Provisions) Act 1995* to the Lake and Ouse Rivers.

Whilst it is not proposed that there would be any change to Hydro Tasmania's rights or obligations, consideration should be given to codifying all of Hydro's historic rights and obligations into one piece of legislation to establish a more robust framework for future implementation of projects such as Battery of the Nation.

A thorough description and explanation of Hydro's obligations and environmental requirements as they relate to freshwater management would also provide greater certainty and confidence to other water dependent businesses, particularly in light of the pumped hydro component of Battery of the Nation.

Proposals being considered

- Ensure that the legislative framework under which Hydro Tasmania's water rights and obligations sit provides certainty and confidence for proposals such as Battery of the Nation

3.3 Water recycling and reuse

3.3.1 Issue

Water reuse and recycling initiatives provide multiple benefits in relation to reduction in releases of low quality water into the environment as well as a reliable source of nutrient rich water for irrigation.

Supporting the development of alternative water supplies, such as recycled water, can help to meet future demand for water resources.

3.3.2 Stakeholder view

There was interest from some stakeholders in seeing further development of water reuse and recycling schemes.

3.3.3 Position

Recycled water is wastewater that has been treated to remove solids and pathogens. Recycled water presents two main benefits to irrigators. Firstly, it is always available; guaranteed supply allows for better forward planning of farming activities. Secondly, contains nutrients potentially reducing the cost of inputs to farming operations. There are restrictions applied to the use and application of treated wastewater, depending on the level of treatment attained, as it has potential to contain pathogens that may be harmful to human and animal health.

Info Box 9

TasWater currently supplies recycled water from 37 Sewage Treatment Plants (STPs) to 70 properties across 32 Recycled Water Schemes (RWSs), amounting to a significant volume of wastewater each year that avoids being discharged into waterways. Instead it becomes a useful nutrient-rich agricultural product.

Approximately 5,400 megalitres a year of treated liquid effluent is reused. Typical uses for irrigation of treated effluent include pasture, cropping, orchards and golf courses. On a state-wide basis these applications represent approximately 11-12 % of all effluent, with the rest discharged to the environment. In Greater Hobart, the percentage of effluent being reused is around 20-25% per year due to larger reuse schemes in the southern region.

The majority of TasWater's existing RWSs consist of one or two irrigation customers directly connected to a STP with the mutual benefits of compliant discharge management for TasWater and low cost irrigation water for the farmer. The other end of the scale is the Clarence Recycled Water Scheme which has 26 customers with water demand far in excess of available supply. The Brighton Recycled Water Scheme (approximately 15 users) and the Penna Scheme (6 users) are also examples of schemes in the south of the state where demand is seasonally higher than supply.

In addition to reuse schemes operated by TasWater, there are examples from industry such as salmon hatcheries supplying recycled water to adjacent land holders.

Tasmania's *State Policy on Water Quality Management 1997* actively encourages the sustainable reuse of treated effluent from wastewater treatment plants. The State Policy requires that before a new discharge to surface water is approved, all reasonable reuse options have been ruled out for practical, economic or environmental reasons.

To implement a new recycled water scheme in Tasmania a Development Proposal and Environmental Management Plan is prepared and submitted to the EPA for assessment to ensure that the proposed recycled water use is sustainable and will not create negative outcomes on either the environment or public health.

Recycled water schemes are typically accompanied by a range of environmental monitoring programs to ensure that there is no negative impact of recycled water use with time.

Recycled water has various limitations on how and where it may be used. There are also some restrictions on land use for short periods after recycled water has been applied. Recycled water customers of TasWater are required to enter into a formal Recycled Water Agreement which details legal arrangements such as infrastructure ownership and recycled water pricing. Each recycled water property must also have a site specific Irrigation and Environmental Management Plan detailing recycled water management, how the recycled water will be used in a manner that is safe and sustainable.

There are currently no targets for wastewater recycling in Tasmania however, water reuse is a priority when the EPA considers wastewater management options proposed by industry.

Proposals being considered

- Support ongoing development of policies to encourage water recycling and reuse

3.4 Other emerging water dependent industries such as renewable hydrogen

3.4.1 Issue

Australia's National Hydrogen Strategy[10] identified that Tasmania is uniquely positioned to develop a large-scale competitive renewable hydrogen industry using its abundant existing and expandable renewable wind energy firmed by hydro power, abundant fresh water, and existing industrial zones with high quality infrastructure.

Globally, renewable hydrogen is being recognised as an enabler of a clean, secure and affordable energy future. Hydrogen is a molecule that in pure form is usually a gas (though it can also be a liquid) and is quite abundant, for example it is found in water (H_2O), along with

[10] Australia's National Hydrogen Strategy, COAG Energy Council, 2019

oxygen. Hydrogen can be used just as traditional natural gas is used, usually combusted; or can be used to create electricity, by using it as the fuel to power electricity generators.

Hydrogen can be produced from fresh water through a process called electrolysis. The hydrogen can then be used locally or it can be condensed and shipped anywhere in the world for use as a fuel.

3.4.2 Stakeholder view

Stakeholders did not raise any issues or concerns about renewable hydrogen during consultation on the Rural Water Use Strategy.

3.4.3 Position

The emerging renewable hydrogen industry presents significant opportunity for Tasmania. The lower cost production of renewable hydrogen will require the use of fresh water. As with any new proposal to take fresh water for consumptive uses, the requirements of the WMA will apply.

In a similar way to the emergence of pumped hydro technology in Tasmania, renewable hydrogen presents a new high value use of Tasmania's freshwater resources. It is considered that these new high value uses can be accommodated within the existing water management framework in a way that will not degrade the viability of other water dependent industries in the State.

The Government has released its Tasmanian Renewable Hydrogen Action Plan and in March 2020 committed $50 million to assist in developing a renewable hydrogen energy industry in the Tasmania.

Proposals being considered

- Investigate options to provide strategic whole of government oversight to emerging new water developments

GOAL 4 Administrative Efficiency

Ensure integrated, fair and efficient water administration

4.1 Water management information systems

4.1.1 Issue

Water management information is stored in a number of custom designed databases that are dated and poorly integrated. Whilst the databases have serviced the operational and business requirements of the Department, they are increasingly creating inefficiencies in the way we do our business and our future capacity to work efficiently and effectively to manage the State's water resources. Additionally, there is limited public availability of water management information and our systems are not readily adaptable to increase transparency. This is significant for a range of Rural Water Use Strategy matters and if not addressed, will impact on our potential to meet the 2050 vision for growing agricultural productivity. The systems also limit the potential for the community to be engaged effectively in water resource management.

4.1.2 Stakeholder view

There were no specific issues raised by stakeholders in relation to water management information systems, however stakeholders are likely to benefit significantly from proposed changes.

4.1.3 Position

Internal consideration of the Department's water management systems has highlighted a range of improvements that would improve the way the State's water resources are managed.

Key improvements would include:

- Developing a modernised water register. The current Water Information Management System database is based on outdated technology, is unable to be integrated with other systems and is struggling to meet current expectations and requirements.
- Reviewing the processes and practices involved in registering water entitlements, including how improvement of the legislative system that underpins registering water entitlements operates.
- Improving public interfacing to water information management systems. Through improved access to information on water resources, the understanding of, and

involvement in, water management by water users and the broader community can be enhanced.

- Underpin external systems facilitating water trading.
- Integrated communication options for alerting licence holders to restriction triggers, high flows and other management triggers that impact upon a licence holder's use of water entitlements.
- Capturing and reporting water use and water conveyance information in a dedicated and fit for purpose information management system.
- Developing an online application system for dam works permits, well works permits, water licenses and associated applications.
- Facilitating improved communication and increased data sharing between water managers.
- Ensuring the variety of information collected by the Department in relation to water resources is stored appropriately and efficiently to support the delivery of water management outcomes.
- Scheduling and resourcing updates of important databases that support decision making.
- Facilitating more intelligent and insightful data analysis to underpin adaptive water management.

Proposals being considered

- Undertake preliminary scoping and seek funding to develop a new licensing and permitting platform that will meet the current and future needs and expectations of the community for the management of Tasmania's freshwater resources
- Investigate options for improved coordination and data sharing between water entities for the efficient management of the State's freshwater resources
- Consider updating and modernising existing databases so that they can provide an integrated platform to provide useful and easy to interpret information to underpin planning decisions and be used in more strategic development of the State's freshwater resources

4.2 Water legislation amendments and review of internal processes and practices

4.2.1 Issue

There are a number of potential legislative amendments and changes to administrative processes and practices identified throughout this position paper that would improve the efficiency, consistency and effectiveness of the legislative framework.

4.2.2 Stakeholder View

Potential legislative amendments and changes to administrative processes and practices noted throughout this position paper have arisen from the views of stakeholders as well as the Department's own consideration of the legislative framework.

4.2.3 Position

This position paper has flagged where legislative amendments could provide a more future focused system to support rural water use. A few examples include amendments that will:

- Modernise the legislative arrangements for managing and operating irrigation schemes;
- Simplify statutory water management planning;
- Further support the development of water markets and other arrangements that enhance the flexibility for irrigators to manage their water allocations responsively;
- Codify Hydro Tasmania's historic rights and obligations into one piece of legislation to establish a more robust framework for future implementation of projects such as Battery of the Nation.

Further work and consultation with stakeholders outside the Rural Water Use Strategy will be required to determine the detail and scope of legislative amendments. Some of this work is already underway, for example in relation to self-management of publicly owned irrigation schemes.

Opportunities for improving the Department's internal processes and practices have also been identified.

Proposals being considered

- Identify the suite of legislative reforms to enhance efficiency, consistency and effectiveness of the water management framework

4.3 Water Management Fees

4.3.1 Issue

Freshwater is valuable in a number of ways or for different purposes. For the Government the goal of managing water as a natural resource is to provide for an appropriate balance between the various competing valuable uses of water for the long term. To effectively manage freshwater as a sustainable and useful resource it is necessary to develop a scientific understanding of the resource and to provide for orderly access to the resource.

The Department, as the manager of Tasmania's freshwater resources has a program to ensure it understands the freshwater resource and the systems which depend on it; and operates a licensing system to ensure that the resource is used in a sustainable way.

The Department faces various costs in managing Tasmania's freshwater resource. In 2018-19 these costs amounted to $4.96 million. Running an effective freshwater management system provides a range of benefits: for example, commercial users of water make money out of having a right to access a sustainably provided business input; and all Tasmanians share in the benefits of maintaining our waterways in good condition. Consequently, it is reasonable that some of the water management costs be met by taxpayers, and that some of the costs are recovered from the private interests that obtain a direct benefit from the water management work of the Department. This cost recovery is achieved by collecting fees which are set in Regulations established under the WMA.

The water licence fee structure was established with the commencement of the WMA in 2000. The fee structure should be reviewed following any legislative changes arising from the Rural Water Use Strategy.

4.3.2 Stakeholder view

There were no comments made specifically in relation to water management fees.

4.3.3 Position

Periodic review of fees ensures that fees are equitable and take account of the approach taken state-wide by the Department to manage our freshwater resources. Notably, the RWUS is likely to result in changes to the Department manages our freshwater resources. Consideration should be given to reviewing water management fees.

Further work and consultation with stakeholders will be required in this area.

Proposals being considered

- Undertake a detailed review of water management fees following any legislative changes arising from the Rural Water Use Strategy

APPENDIX 1. THE WATER MANAGEMENT FRAMEWORK

Summary of the key elements of the Water Management Framework

Legislation

- *Water Management Act 1999*
- *Irrigation Clauses Act 1973*
- *Waterworks Clauses Act 1952*
- *Irrigation Company Act 2011*
- *Water Management Regulations 2019*
- *Water Management (Safety of Dams) Regulations 2015*
- *Water Management (Electoral and Polling) Regulations 2019*

National water policy

- National Water Initiative

Policies and Guidelines

- Surface water allocation decision framework
- Guideline- Accounting for your water
- Guiding principles for water management planning in Tasmania
- Guiding principles for water trading
- Guidelines to be followed in regards to Dam Safety
- Enforcement policy for the *Water Management Act 1999*
- Water management during extreme dry conditions
- Dam works assessment decision framework

Principles and practices for public engagement

- Water Resources Group Stakeholder Communication and Engagement Strategy

Information management systems and tools used to support decision making

- Water Information Management System (WIMS) – public access via the Water Information System of Tasmania (WIST)
- Groundwater Information Management System (GWIMS) – public access via the Groundwater Information Access Portal
- Water Assessment Tool (WAT)
- Surface water monitoring information – public access via the Water Information Tasmania Web Portal
- Conservation and Freshwater Ecosystem Values database (CFEV)
- Natural Values Atlas (NVA)
- River health monitoring program database

Tables summarising the key elements of each of the Acts and Regulations

Water Management Act 1999	
Relevant Part	Function
Part 4	Development of Water Management Plans to formalise rules around allocation of and access to water resources within a defined area.
Part 5	Rights to take water.
Part 6	The licensing and allocation of water and the administrative arrangements around transferring these entitlements and includes prioritising access during periods of inadequate supply through the application of surety levels.
Part 6A	Conveying water via a watercourse.
Part 7	Accessing groundwater through the permitting of drilling wells as well as the licensing of well drillers.
Part 8	The permitting of dam works and the subsequent operation of dams through dam operating notices.
Part 8A	The ongoing issues dam safety and maintenance
Part 9	The establishment and administration of water districts.
Part 10	The establishment, powers and duties of trusts in the administration of a water district or water management plan.
Part 11	Rules around water meters
Part 12	The appointment and powers of Authorised Officers
Part 13	Enforcement activities including the issuing of infringement notices and demerit points.
Part 14	Opportunities for affected parties to apply to review or appeal decisions

Water Management Regulations 2019	
Relevant Part	Function
Part 2	Sets out volumetric limits on the rights to take water under Part 5 of the Water Management Act
Part 3	Sets out how fees are to be calculated for water licences
Part 4	Sets competency requirements for classes of well drillers

Part 5	Sets out the penalties for offences committed under the Water Management Act and how demerit points should be applied
Part 6	Sets out prescribed requirements in relation to Trust rules and the keeping of records and provision of information

Water Management (Safety of Dams) Regulations 2019	
Relevant Part	Function
Part 2	Sets out categories of competence and authorisation
Part 3	Deals with design, construction and maintenance of dams

Water Management (Electoral and Polling) Regulations 2019	
Relevant Part	Function
Part 2	Deals with the administration of Trust elections and how they should be conducted
Part 3	Deals with the administration of polls undertaken by Trusts and how they should be conducted

Irrigation Company Act 2011	
Relevant Part	Function
Part 2	Sets out the organisational arrangements, financial requirements and duties of members of the company (Tasmanian Irrigation Pty Ltd)
Part 3	Sets out how the company can acquire and enter on to land
Part 4	Sets out how the company can transfer assets and employees

Irrigation Clauses Act 1973	
Relevant Part	Function
Part 2	Deals with construction of waterworks including the acquisition of property and land and the use pf natural watercourses to supply water.
Part 3	Sets out water will be supplied, rules around irrigation rights and how they are to be administered.
Part 4	Sets out how connections are to be made between a main supply channel and a persons entitled to be supplied with water.

Part 5	Deals with water meters and how they are to be administered and operated.
Part 6	Describes the powers available to the operator to actively manage and maintain the system to minimise the loss of water from the system.
Part 7	Deals with the development and application of by-laws, rates and charges.
Part 8	Sets out requirements for the mapping of any channels or works administered within the district.
Part 9	Deals with any potential interactions with mining operations within the district.
Parts 10 & 11	Deal with offences, authorised officers and infringement notices
Part 12	Deals specifically with the River Clyde Irrigation Trust and enable the Minister to be able to confer irrigation rights within that district

Waterworks Clauses Act 1952	
Relevant Part	Function
Part 2	Deals with the construction of water works, the acquisition of land and property and the powers and responsibilities in relation to undertaking works
Part 3	Sets out how supply of water should be administered
Part 3A	Sets out how public water supplies can be used for recreational use
Part 4	Sets out responsibilities for the installation and operation of works to provide for fire protection.
Part 5	Sets out how connections are to be made between a main supply channel and a persons entitled to be supplied with water.
Part 6	Deals with water meters and how they are to be administered and operated.
Part 7	Describes the powers available to the operator to actively manage and maintain the system to minimise the loss of water from the system.
Part 8	Deals with the development and application of by-laws, rates and charges.
Part 9	Sets out requirements for the mapping of any channels or works administered within the district.
Part 10	Deals with any potential interactions with mining operations within the district.
Part 11	Sets out a number of offences

APPENDIX 2. OBJECTIVES OF THE *WATER MANAGEMENT ACT 1999*

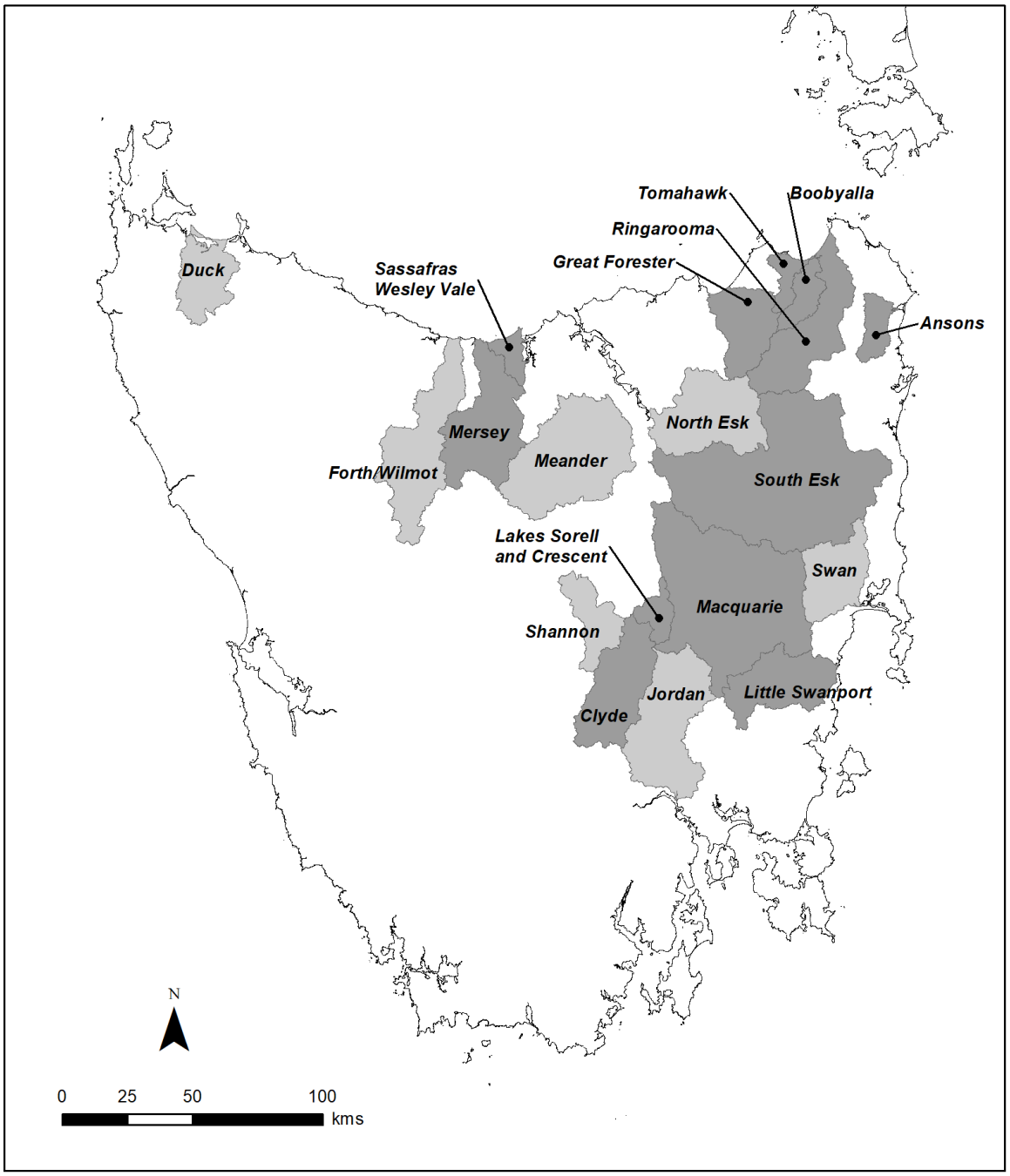
The objectives of the *Water Management Act 1999* are to further the objectives of the resource management and planning system of Tasmania. These are listed below:

- to promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity; and
- to provide for the fair, orderly and sustainable use and development of air, land and water; and
- to encourage public involvement in resource management and planning; and
- to facilitate economic development in accordance with the other objectives; and
- to promote the sharing of responsibility for resource management and planning between the different spheres of Government, the community and industry in Tasmania.

and in particular to provide for the use and management of the freshwater resources of Tasmania having regard to the need to:

- promote sustainable use and facilitate economic development of water resources; and
- recognise and foster the significant social and economic benefits resulting from the sustainable use and development of water resources for the generation of hydro-electricity and for the supply of water for human consumption and commercial activities dependent on water; and
- maintain ecological processes and genetic diversity for aquatic and riparian ecosystems; and
- provide for the fair, orderly and efficient allocation of water resources to meet the community's needs; and
- increase the community's understanding of aquatic ecosystems and the need to use and manage water in a sustainable and cost-efficient manner; and
- encourage community involvement in water resource management.

APPENDIX 3. CONTEXTUAL MAPS



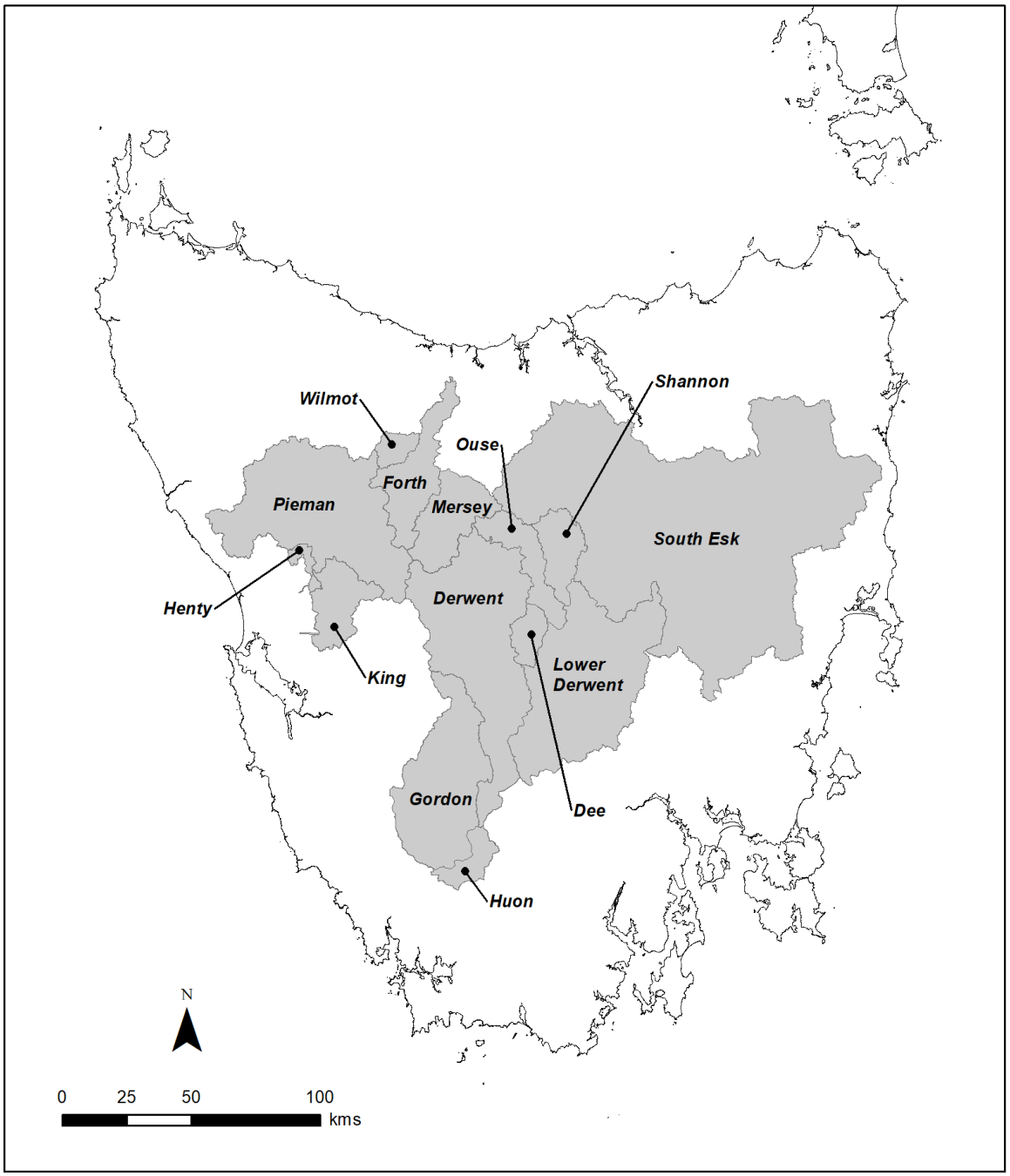
Water Management Plan areas, Tasmania

Water planning catchment areas

STATUS

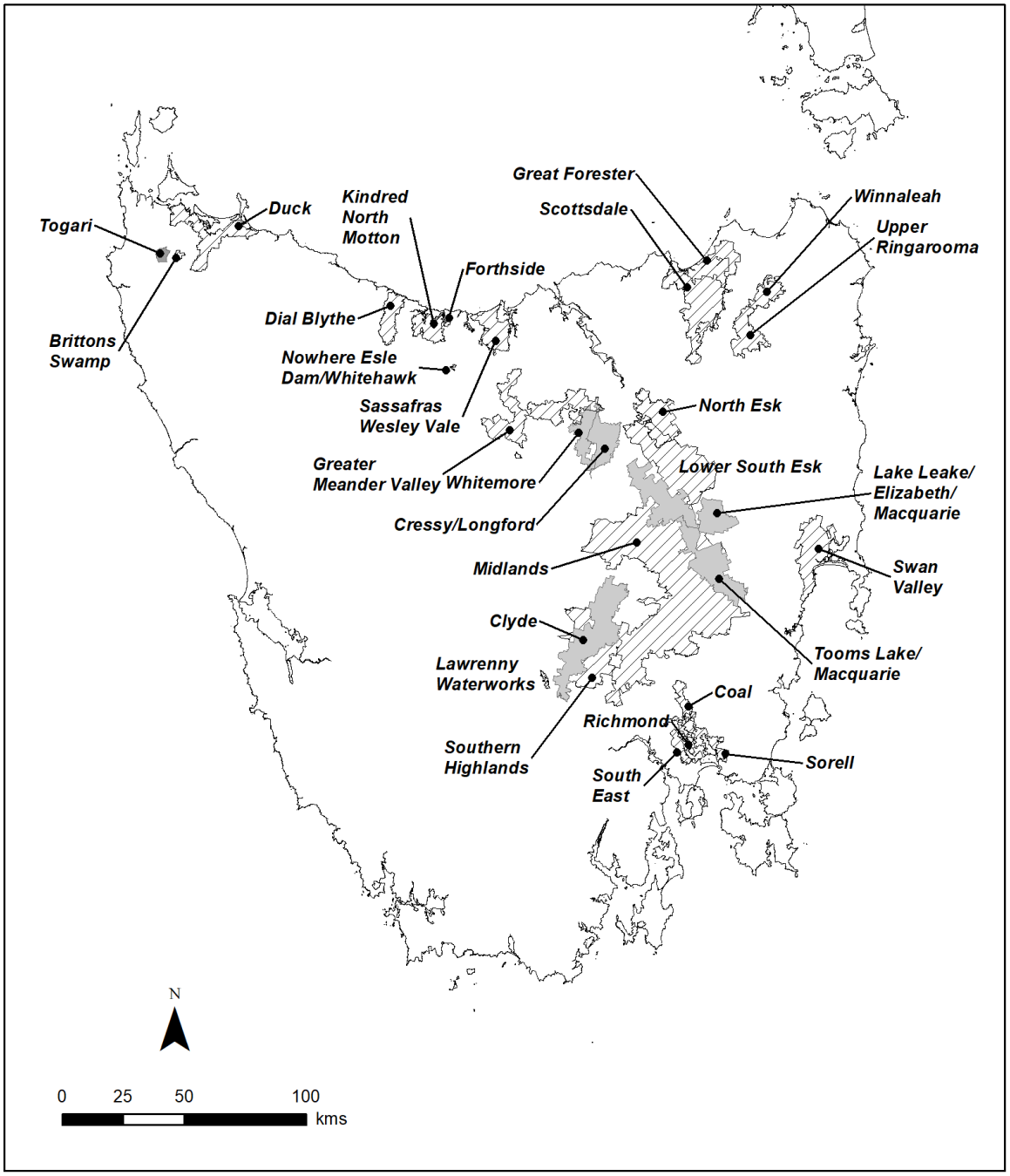
Adopted Water Management Plan

Water Management Statement



Hydro-electric Districts, Tasmania

Hydro-Electric Districts



Irrigation and Water Supply Districts, Tasmania

Irrigation Districts administered by Tasmanian Irrigation

Irrigation Districts administered by other water entities

Water Supply Districts

APPENDIX 4. EXTERNAL STAKEHOLDERS WHO ENGAGED IN THE TARGETED STAKEHOLDER CONSULTATION DURING THE SCOPING STAGE

- Hydro Tasmania
- Tasmanian Irrigation
- TasWater
- Tasmanian Farmers and Graziers Association (TFGA)
- Winnaleah Irrigation Scheme
- Ringarooma Water Users Group
- NRM North
- NRM South
- Cradle Coast NRM
- Tasmanian Conservation Trust
- Environment Defenders Office
- Tasmanian Institute of Agriculture
- Dairy Tas
- Tasmanian Poppy Growers
- Elizabeth Macquarie Irrigation Trust
- Dial Blythe Irrigation Scheme (An irrigator who at the meeting said he was representing himself and not the Dial Blythe scheme)
- Tasmanian Agricultural Productivity Group
- Angler's Alliance Tasmania
- Members of the Inland Fisheries Advisory Council although not as representatives of that body
- Department of State Growth, Planning Policy Unit
- DPIPWE - AgriGrowth
- DPIPWE - EPA
- Climate Change Office