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Independent audit of Queensland non-urban water measurement and compliance

*Queensland Government response
June 2018*

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Introduction

Water is the lifeblood of our rural communities—the environment, people and industries need a reliable source of water to survive and grow.

The water that supports these communities is supplied by an extensive network of natural and augmented water features, comprising over 6.4 million megalitres of water, held in 43 000 water entitlements. It is vital that the network is supported by the right infrastructure, policies and enforcement settings.

Water resources are a critical input to driving job creation and economic development across Queensland; in particular Queensland's agriculture sector is dependent on water access. The output for primary industries in Queensland is forecast at \$20 billion for the 2017–18 financial year with more than 100 000 people directly employed in the sector.

Background

In August 2017, the Queensland Government appointed an independent expert panel to audit non-urban water measurement and compliance (Independent Audit). This report was handed to Government in March 2018.

In November 2017, the Murray–Darling Basin Authority Water Compliance Review (MDBA Review) delivered an independent, basin-wide strategic review into compliance.

This Queensland Government Response deals directly with the Independent Audit, matters raised by the MDBA Review, and the emerging requirements of the Murray–Darling Basin intergovernmental commitments.

The Government has accepted, or accepted in principle, the majority of the recommendations in the Independent Audit.

The Rural Water Management Program

To deliver the Queensland Government's response, and build on actions already occurring, the Department of Natural Resources, Mines and Energy (DNRME) is developing the Rural Water Management Program (the program).

The program will deliver a comprehensive response across four themes that underpin the successful implementation of Queensland's rural water management.

As a priority, the program will be focused on delivering actions to improve water management in the Queensland Murray–Darling Basin catchments.

The program will deliver:



Transparent water information

DNRME will use outcomes from the Water Dashboard trial, along with a review of its existing systems to inform government decisions about any enhanced water information system. This will support entitlement holders to meet regulatory obligations, and provide potential water customers with information to help make investment decisions. It will also strengthen DNRME's ability to implement the regulatory framework.

DNRME is revising its compliance approach and will publish water measurement and compliance information.



Strengthened metering

DNRME will undertake stakeholder consultation to review and strengthen its existing metering policy, and develop an implementation plan that considers appropriate delivery methods and technologies.



Appropriate regulatory frameworks

The *Water Act 2000* and Water Regulation 2016 provide effective frameworks to plan for and manage access to Queensland's precious water resources.

DNRME will review these existing regulatory frameworks to identify any changes that may be required to support improved compliance and water measurement outcomes.



Robust compliance that builds community confidence

DNRME will refocus resources on regulatory actions and metering in priority catchments that are fully allocated or—like the Murray–Darling Basin—have national reporting obligations where there are high risks for environmental flows and impacts on other entitlement holders.

The approach to implementing our water regulatory framework will be aligned to other natural resource management by DNRME to ensure consistency and transparency.

As well as delivering improved water resource management, the program also provides the opportunity to maximise the value of our water resources by enhancing our water markets and trading regimes and enabling optimal use of Queensland's unallocated water reserves. For example, the sale or lease of unallocated water can provide economic development opportunities for new and expanding businesses through access to water resources.

Independent Audit recommendations and Queensland Government response

The following table outlines the recommendations made in the Independent Audit and the Queensland Government's response. The Queensland Government is committed to building on the recommendations from both reviews to improve the state's approach to managing rural water.

Governance

| Independent Audit recommendations | Government response |
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| <p>1. A Compliance Management and Review Group is established to review and report regularly to senior management on the:</p> <p>a. Implementation of a formalised management system to manage and monitor the water metering and measurement activities including compliance and new or changed obligations arising from legislation and Intergovernmental Agreements.</p> <p>b. Implementation of a documented, formalised and systematic approach to water compliance to apply across all regions to ensure a consistent and robust conduct of investigations and compliance actions.</p> <p>The Group must allow performance assessment to be conducted separately from operational activities to provide oversight and consistency across the state.</p> <p>An independent audit must be conducted within two years of all water measurement and compliance programs including the performance of the Compliance Management and Review Group.</p> | <p>Accepted in principle</p> <ul style="list-style-type: none"> The Queensland Government has recently established a new Water Markets and Supply Division in DNRME to improve the transparency of water management, allocation and use. The new division will provide greater separation between operational and compliance responsibilities in DNRME and provide a regulatory framework assurance role. The Queensland Government will publish an annual review of water regulatory activities, governance and achievements and set regulatory strategies for the coming business year, with the first review published in mid-2019. As part of delivering the Queensland Government's response, DNRME will develop and implement a formalised management framework and associated governance arrangements for its rural water management water business by December 2018. This framework will include assurance and audit processes. |
| <p>2. The future role and structure of the Natural Resource Compliance Committee (NRCC) should be reviewed in light of the revised governance and management arrangements.</p> | <p>Accepted</p> <ul style="list-style-type: none"> DNRME will review the role and structure of the NRCC as part of its development of a formalised management framework and associated governance arrangements. |
| <p>3. Implement a documented, formalised and systematic catchment risk assessment process and apply the outcomes to decision-making on water measurement and monitoring. The risk assessment process must be consistent with any relevant intergovernmental agreements and the community and stakeholders must be consulted in undertaking these risk assessments.</p> | <p>Accepted</p> <ul style="list-style-type: none"> As part of managing the water planning framework for the Queensland Government, DNRME currently undertakes detailed risk assessments as part of its water planning processes with community and stakeholder consultation an integral component of the planning process. Based on the pressure on the water resource in each catchment, DNRME will undertake a state-wide risk assessment of its water measurement (including metering) and monitoring activities by October 2018. Future compliance and metering activities will focus on highest priorities identified. In future, water plans will consider on a risk basis appropriate metering and measurement priorities as they are developed or updated. |

Compliance actions and culture

| Independent Audit recommendations | Government response |
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| <p>4. The leadership of DNRME establish a stronger culture towards compliance enforcement and empower the organisation to achieve the compliance objectives through:</p> <ol style="list-style-type: none"> ensuring that the Compliance Management and Review Group has adequate levels of well-trained regional staff to complete the activities required in the compliance plan having compliance targets included in the performance plans of responsible officers establishing systems to ensure that the standard of evidence meets judiciary scrutiny implementing action plans to address the timely closure of compliance cases placing a greater focus on ensuring that the recording and monitoring of compliance cases are maintained in a timely, consistent and accurate basis ensuring a compliance officer who is familiar with the region makes regular on ground inspections/audits. | <p>Accepted in principle</p> <ul style="list-style-type: none"> As a priority, DNRME is already building on existing systems and processes to deliver a robust approach to water plan implementation and compliance that is consistent with other natural resource operational activities undertaken by DNRME. This will include finalising compliance policies, procedures and guidelines to support compliance activity. Government Responses to Recommendation 1 will also support delivery against this recommendation by providing enhanced leadership and focus on compliance activities within DNRME. |
| <p>5. Steps are taken to address the following elements of the compliance arrangements:</p> <ol style="list-style-type: none"> Develop a strategy to educate and raise awareness of entitlement holder's rights and obligations and the penalties associated with any breaches, and send stronger deterrence messages to the community. Review the penalties and sanctions available for breaches to ensure that adequate deterrence is achieved. Review the statute of limitations period to ensure the time frame is appropriate and allows sufficient time to complete all the steps required to prepare cases i.e. complete investigations, gather facts/evidence and prepare briefs. Place an obligation on the resource operations licence (ROL) holder to report any take above entitlement and provide details of recurring non-compliance to allow prosecution. Require ROL holders to undertake pro-active management of compliance against volumetric limits. Prohibit water users from forward drawing on water accounts that are overdrawn at the end of the water year. | <p>Recommendations 5a–d accepted in principle</p> <ul style="list-style-type: none"> By July 2018, the Queensland Government will review existing legislation and policies and identify enhancements in relation to its water compliance arrangements. By February 2019, DNRME, as the lead agency with responsibility for water measurement and metering, will review its metering policy and, where necessary, provide recommendations to Government for improved measurement and metering arrangements. DNRME will also further develop a comprehensive entitlement holder education and awareness program to improve understanding of existing and any new regulatory requirements. <p>Recommendation 5e is not accepted.</p> <p>Queensland's strong water planning framework accommodates the 'boom–bust' cycle of water availability in river systems that may cease to flow for years at a time. Some water plans may specify multi-year accounting.</p> <p>This water management approach enables certain water users to take more than the annual volume of their water entitlement in an individual year. Under multi-year accounting, this is offset by an equivalent reduction of water access in the subsequent water years.</p> |

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| | This flexibility for water users is rigorously tested in developing the water plan. The risks are explored and examined through public engagement, submission and hydrologic model testing, and managed through defined water sharing rules. |
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Transparency

| Independent Audit recommendations | Government response |
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| <p>6. More information relating to water resource management, water use and compliance is made public by DNRME to improve transparency. This should include the development and publication of state-wide and catchment-level compliance objectives and management strategies aligned with risks and issues. In particular:</p> <ol style="list-style-type: none"> a. DNRME makes an accountable commitment to achieving its compliance objectives and targets in its corporate plan. DNRME to report annually on performance. b. DNRME publishes its compliance plan or guidelines on how it manages and enforces compliance (Natural Resources Compliance Response Guidelines, (May 2017)). c. DNRME makes available to each water user their water entitlement, water used to date and any restrictions on taking water. d. DNRME releases information on a catchment basis on water availability, water use and water traded, to increase transparency and information available to the community and stakeholders. e. DNRME develops a holistic water balance for Queensland that is suitable for reporting all water in Queensland and its regions and for separately water managed areas. | <p>Accepted in principle</p> <ul style="list-style-type: none"> • The Queensland Government will improve its public reporting on compliance planning, objectives and targets. • The Queensland Government will review existing systems to identify information needs and enhancements that can deliver increased transparency of water information for the community and entitlement holders and a platform for enhanced water sales and trading. • As part of this commitment, in March 2018, DNRME released a trial version of its new water dashboard for two water management areas to provide water users with information on their entitlements, water availability and their usage. • In addition, and by December 2018, DNRME will also release an online tool to help the community identify available water throughout Queensland. Also see recommendation 1. • DNRME has identified that recommendation 6e is contingent on the outcomes of system reviews and the development of any enhanced water accounting systems. |

Metering policy

| Independent Audit recommendations | Government response |
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| <p>7. Introduce a metering policy for supplemented and unsupplemented water extractions, which includes a stronger validation, verification and maintenance oversight regime and an assessment system to ensure the meter chosen and installed is fit for purpose. It should be consistent with the principles of AS4747 and allow a transition period for grandfathering arrangements of the existing meter fleet.</p> | <p>Accepted</p> <ul style="list-style-type: none"> • DNRME already has a metering policy which is consistent with AS4747. • DNRME will review its existing metering policy by February 2019 to ensure it delivers a comprehensive validation, maintenance and assurance regime, consistent with Australian Standard 4747. |
| <p>8. Specify and introduce a stronger meter validation and maintenance oversight regime which includes</p> | <p>Accepted</p> |

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| <p>auditing of meters, DNRME validation and verification of meters. DNRME should engage the accredited meter validators directly to ensure consistent practices and remove any potential conflicts of interests. A prerequisite knowledge and experience of water meters, or appropriate training should be required for validators.</p> | <p>DNRME will include this recommendation as part of its review and proposed amendment of the existing metering policy for government consideration by February 2019.</p> |
| <p>9. The appropriate powers or policies should be provided to DNRME:</p> <ol style="list-style-type: none"> to compel the repair of a faulty water meter owned by the landholder (not working or inaccurate) to require ROL holders and meter-owners to keep systematic records of meter maintenance and of audits completed to introduce penalties/sanctions for validators providing certificates that are inconsistent with the Queensland meter standard to ensure that the application of the metering standard forms part of a quality management system. | <p>Accepted DNRME will deliver on this recommendation as part of its review of its existing metering policy and through the actions it takes in response to reviewing compliance legislation and policies for government consideration (Responses to Recommendations 5, 7 and 8).</p> |
| <p>10. DNRME investigate further to identify why a large number of entitlements are not metered. If any of the entitlements should be metered, an action plan should be established to have meters installed.</p> | <p>Accepted As per Recommendations 3, 7 and 8.</p> |

Information systems and resourcing

| Independent Audit recommendations | Government response |
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| <p>11. DNRME invests additional resourcing in management systems, information systems and people to deliver sustainable metering and compliance arrangements to support Queensland's water management framework state-wide. In particular:</p> <ol style="list-style-type: none"> Increase the investment in its staff with knowledge and skill capacity in water measurement and monitoring fields. Invest in fit-for-purpose information systems and technologies to provide a water accounting system for supplemented and unsupplemented water which stores the information required to manage and monitor; a compliance information reporting and management system [Review if the existing system (CIRaM) remains the most appropriate and efficient system]; and, remote-read technology and supporting systems to improve timeliness and accuracy of meter reading data. | <p>Recommendations 11a–d accepted in principle</p> <ul style="list-style-type: none"> DNRME will realign internal staff and resources to deliver on the recommendations. As per Recommendation 6, Queensland Government will consider the need for investment in water information and accounting systems once DNRME has completed its review of its existing systems. DNRME is currently undertaking a state-wide review and audit of Queensland's hydrometric network and the development of a risk-based program to implement corrective actions and ensure the state's monitoring networks are fit for purpose. DNRME's Water Monitoring Network is quality-assured to ISO 9001 and is widely recognised as best practice. Annual reviews will continue to assess the adequacy and scope of the network and innovation opportunities. By December 2019, DNRME will require Resource Operations Licence (ROL) holders to provide an |

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| <ul style="list-style-type: none"> c. Review the existing hydrometric network and investigate alternative technologies that may be available to enhance the network, such as satellite imagery and drones. d. Review the ownership of groundwater and stream measurement devices to transfer those gauges which are required for resource management or compliance purposes to DNRME from ROL holders. The remaining groundwater and stream measurement devices, which serve an operational role to ROL holders, would remain in ROL holder ownership and be managed to a standard determined by the ROL holder. e. Establish a scientific and technical committee with appropriate technical experts within and outside DNRME to focus on researching and advising on water measurement standards, policies and technologies. The committee would report to the senior DNRME officer responsible for water policy. | <p>independent report on the condition and quality of the hydrometric monitoring networks.</p> <p>DNRME does not accept recommendation 11e.</p> <ul style="list-style-type: none"> • DNRME has extensive processes in place to engage in best practice water science and policy including: <ul style="list-style-type: none"> a. in Queensland via MOU partnership with Department of Environment and Science b. nationally via existing forums with MDBA, CSIRO and Standards Australia. |
| <p>12. DNRME should review the indicative resourcing requirements and costings for modelled scenarios provided in this report to produce more detailed financial assessments that can be used as a basis for development of investment programs for defined periods to implement the recommendations of the Audit.</p> | <p>Accepted in principle</p> <p>As per response to recommendation 7.</p> |

Meter ownership

| Independent Audit recommendations | Government response |
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| <p>13. A series of actions take place over the next 18 months to assist DNRME gather the required information to make a long-term decision on meter ownership:</p> <ul style="list-style-type: none"> a. Seek expressions of interest from third-party providers to explore the potential of a delivery option model, including to supply, maintain and read meters, and identify any necessary meter charges required under such a model. b. Within 18 months, start a review to compare the success of whether the stronger oversight has had desired impacts, against the merits of changing the meter ownership model with either the government or a third-party provider owning the meters and taking into account stakeholder views. c. Resolve the meter ownership model within 24 months. | <p>Accepted in principle</p> <p>As per response to recommendation 7. Prior to government’s consideration of DNRME’s review of the existing metering policy (in February 2019) DNRME will undertake an assessment of the most effective delivery model, including the merits of a third-party provider option. Stakeholder and industry views will be sought as part of the review.</p> |

Water plans and Water Regulation 2016

| Independent Audit recommendations | Government response |
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| <p>14. Ensure greater consistency across the various water planning and regulatory instruments and increase transparency by:</p> <ol style="list-style-type: none"> a. as part of reviews required under legislation, giving a greater focus to water plan operational rules and implementation plans to ensure rules and limits remain relevant and consistent with overall water management objectives and compliance outcomes. The community and stakeholders should be consulted about these reviews. b. conducting regular reviews of DNRME’s decision framework for metering to ensure it remains relevant and appropriate. DNRME also investigates making metering programs more transparent by including them in the water management protocols for each catchment rather than the Water Regulation 2016. DNRME publicly releases the metering programs. c. including assessments for stock and domestic use in catchment-based risk assessments. If there is increased competition for water in an area which includes impacts of increased stock and domestic use, further controls on stock and domestic water use should be imposed. d. completing the review of overland flow to ensure take is consistent with the relevant water plans. e. reviewing the time frames associated with the meter roll-out program and shorten the two-year time frame from when a decision is made to meter an area to when meters are actually installed. f. publicly releasing timely reports on the status of water plans and the decisions made (whether to rollover, amend or replace a plan). The community and stakeholders are consulted during this process and the performance assessments of water plans are publicly released. g. making ROL compliance with respect to environmental flow obligations transparent, with reports by ROL holders to be made publicly available. | <p>Accepted in principle</p> <ul style="list-style-type: none"> • Water plans have a life of 10 years and the Minister reports on their performance every five years. The regulatory framework provides for transparency and the opportunity for public submission. Risk assessments are undertaken as part of these processes. • DNRME has already undertaken risk assessments of the stock and domestic pressures on water resources in the MDB and has: <ol style="list-style-type: none"> a. commissioned independent reviews in the Stanthorpe area b. introduced regulatory provisions to exclude the taking of stock and domestic groundwater supplies in key at-risk peri-urban areas. • All future water plans will adopt the enhanced risk assessment processes to ensure they provide formalised and systematic assessments (Refer Recommendation 3). • Regarding Recommendation 14f, DNRME and the Minister comply with the <i>Water Act 2000 (Qld)</i>, which contains detailed obligations and transparency provisions regarding changes, amendments and expiry of water plans. DNRME considers this as an area of strength for the Queensland water legislation. • As per response to recommendations 6 and 7. |

Measurement of overland flow and water harvesting

| Independent Audit recommendations | Government response |
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| <p>15. The reliability and accuracy of water harvesting and overland flow measurement and monitoring is improved by:</p> <ol style="list-style-type: none"> a. adopting data logger and remote read technology b. establishing an overland flow measurement methodology for inclusion in the meter policy which extends to the Border Rivers and other parts of the state and takes into account the methodology for measurement of overland flow in the Lower Balonne. The technical and scientific committee (see recommendation 12) should develop the proposed methodology. DNRME should publicly release the overland flow assessment methods to the community and stakeholders c. reviewing the water licence conditions in the Queensland Murray–Darling Basin catchments against the sustainable diversion limits to identify if any conflicts arise, particularly in relation to carry-over rules and assess how best any conflicts can be resolved or managed. The community and stakeholders should be consulted during this process d. establishing a system to manage overland flow works authorisations including the conversion of these authorisations to volumetric entitlements. DNRME publicly release the authorisation conversion information to the community and stakeholders. A risk-based audit program should involve site visits to confirm that all works are authorised e. implementing a fit-for-purpose water accounting system linked to information management systems that provides all the information required to perform the water measurement and monitoring of water harvesting and the take of overland flow. | <p>Accepted in principle</p> <ul style="list-style-type: none"> ● DNRME will develop an overland flow measurement standard and risk-based overland flow measurement program. The program will be informed by the existing Lower Balonne overland flow measurement trials, approaches used in other jurisdictions and the opportunities presented by emerging technologies. ● The draft Border Rivers and Moonie Water Plan proposes that large-volume overland flow water take is measured in high priority areas by 30 June 2020. ● As per response to recommendation 5, 7 and 8. |



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