Agriculture and Environment Committee – Private briefing
Update on progress

Major recommendations

Recommendation	Response	Timeframe for Implementation	Current Status	Additional Comments
1) The newly formed Office of the Great Barrier Reef be provided with sufficient and appropriate management and administrative authority, so that it can be properly made responsible and held accountable for Queensland's reef management strategies and programs.	**Agreed**	From July 2015	Partially implemented	- The Office of the Great Barrier Reef (OGBR) was established on 11 May 2015 and is responsible for overseeing implementation of the Queensland government's reef management strategies and programs. The OGBR also works closely with the Commonwealth Department of Environment and the Great Barrier Reef Marine Park Authority to ensure coordination and alignment with the Commonwealth programs and investment. This includes the creation of a joint secretariat to coordinate and deliver the Reef 2050 Long Term Sustainability Plan across the three agencies. This is supported by an implementation strategy and six monthly reporting. - In order to facilitate improved coordination and governance of funding in Queensland, a Reef Inter-Departmental Committee (IDC) has been established with the role of ensuring investments are working together effectively and are well aligned to reef outcomes. - The OGBR is responsible for coordinating and reporting on the expenditure of the existing $35 million a year investment, as well as the additional $100 million over five years that the government has committed. - The OGBR is currently working with the IDC to prepare a forward looking investment plan for all reef water quality investment to ensure a coordinated approach to investment with a focus on achieving water quality outcomes.
2) The design and implementation of the suite of programs	**Agreed**	From May 2016	Partially implemented	- Queensland Government has made a number of election commitments in relation to the Great Barrier Reef, including an additional $100 million over five years to improve reef water quality. A

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attributed to the Reef Plan is reviewed to establish they are the most effective and efficient.				high level Great Barrier Reef Water Science Taskforce has been established to provide advice on the most appropriate blend of regulations, industry led programs, market trading or other measures to meet the government's targets, as well as investment priorities for the additional $100M. - The Great Barrier Reef Water Science Taskforce will provide an interim report by December 2015 and a final report by May 2016. This will inform the suite of programs to be delivered by Queensland Government to achieve the government's water quality targets. - The Reef IDC will also consider improved alignment of current investments to reef outcomes and consider options to reprioritise investments where needed to improve effectiveness and efficiency of reef funding, particularly to integrate with the additional $100M. This may include reprioritisation of some of the discretionary program funding out of the existing $35M. For example, discussions are currently underway with DNRM to consider the prioritisation of the next two years of NRM program funding in the Reef catchments. - Under the Reef 2050 Long-term Sustainability Plan, there is an action for the Queensland and Australian Governments to update the joint Reef Water Quality Protection Plan in 2018. The recommendations of the taskforce will be considered and incorporated into the next update of the Plan.
3) Catchment monitoring is expanded to aid in determining the effectiveness of practice management change and to enhance the confidence in modelled outcomes.	**Agreed**	From May 2016	Partially implemented	- The GBR Water Science Taskforce recommendations due in May 2016 will inform investment allocations from the $100M, including potential extensions to the water quality monitoring network. The design of the monitoring program will need to be considered so that it effectively supports the recommended approach (e.g. voluntary, regulatory or market based). - The Queensland Government is currently co-investing with the Australian Government to pilot intensive monitoring at a sub-catchment scale to investigate water quality pollutant changes in

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				response to targeted management. This will inform the potential design improvements to the monitoring network. The key areas of progress/interest include: o the Sandy Creek sub-catchment enhanced monitoring design completed, although no collection of samples has occurred as yet) o the NESP Tropical Water Quality Hub Phase 1 project with an interim progress report outlining proposed sub-catchment scale monitoring and extension-communication framework has been submitted for external peer review (to DSITI, EHP and cane industry stakeholders/end-users). The final report on the project design, incorporating the review and pilot program monitoring outcomes, will be completed by 31st March 2016 - Additionally, an Integrated Monitoring and Reporting Program steering group has been established with the Director General of EHP and CEO of GBRMPA as co-chairs. This group is considering how to integrate the extensive number of monitoring programs in the catchment and marine environments and will also consider gaps in the monitoring network.
4) A rigorous verification process is applied to data on land management practice change, and deficiencies in model inputs be addressed, to improve confidence in, and the accuracy of, inputs into catchment modelling.	**Agreed**	Ongoing from 2013-14	Partially implemented	- The Paddock to Reef Program uses a continuous improvement approach. Following the 2013 review of the program a number of enhancements have been implemented that address this recommendation as outlined below. <u>Land management practice change</u>: - The Phase 2 (2013-14 onwards) data capture and reporting process for land management practice changes is now based on the updated water quality risk frameworks which provide a basis for rigorous evaluation. - The vast majority (>95%) of the land management change data utilised in reporting and modelling is now spatially explicit, meaning modellers

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				no longer have to make assumptions about where land management improvements have been made within a sub-catchment. - The updated process now supplies the specific project spatial data (at the paddock level) in a consistent method directly to the modellers, along with a detailed description of the existing farm management and what it is changing to. New quality control and version control measures have also been implemented that have resulted in significant improvements in the quality of the data submitted. - Independent fertiliser and pesticide use reporting from the sugarcane industry is now being used to cross-check reported management practice changes as an additional line of evidence. <u>Model input improvements</u>: - As part of the continuous program improvement, updated model input layers are incorporated when they become available. Phase 2 improvements already implemented include: seasonal ground cover, improved soils layer, better climate and flow data, finer resolution topographic data and expanded water quality monitoring data. Improvements to the paddock modelling include more detailed modelling of bananas and grains, as well as representation of water recycling pits in the lower Burdekin region. - Gullies, scalds and stream bank erosion are modelled based on scientifically peer reviewed process understanding. Where updated gully maps are available these have been incorporated (areas included to date are the Normanby, Burdekin and Fitzroy catchments). A significant gully mapping program is continuing and further updates will be incorporated. - Pollutants losses via groundwater, such as nitrogen leaching through soils, are monitored at the Paddock to Reef farm trial sites and modelled through the paddock models. From Phase 2, the catchment modelling now represents this pollutant loss pathway as well.

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				- The Paddock to Reef Program uses a multiple lines of evidence approach for evaluating management changes. The program is internationally recognised as a highly innovative, world leading monitoring, modelling and reporting program to quantify the effects of land management on water quality. - Under the requirements of the paddock to Reef Program (P2R), DNRM and DSITI have organised an independent review of the paddock monitoring, and the paddock and catchment modelling components of the P2R. These technical reviews are scheduled for October 20-21, and November 10-11, in Brisbane. The independent review will be chaired by an internationally recognised modelling expert from the Australian National University, and supported by 6 monitoring and modelling specialists. The findings of the review panel are expected by the end of the year.
5) Unambiguous references be included in the tier one Reef Report Card which disclose the degree of uncertainty and levels of potential variability in the reported results.	**Agreed**	September 2015	Implemented	- Inclusion of qualitative confidence rankings was a recommendation from the Phase 1 Paddock to Reef Program review. - A graphic feature to communicate confidence in each key indicator has been included in the Reef Report Card 2014 (tier 1), due in September 2015.

Key findings within report

Update on progress:

Key Findings	Response
2. Program Governance and Design 2.1 There is no single point of accountability for the effective and efficient delivery of Queensland's Reef Plan programs. 2.2 Queensland's programs which pre-date the Reef Plan have not been tailored or adjusted to maximise the achievement of water quality outcomes under the Reef Plan. 2.3 Many of the state's programs have other primary objectives, with water quality a secondary benefit. 2.4 Aggregate spend on Reef Plan at a state level is not tracked and reported and therefore there is uncertainty as to how much is actually spent each year on the Reef Plan. Agencies rely on estimates to report Reef Plan expenditure. 2.5 Water quality improvements rely heavily on research and development. Currently the demands for research are greater than the funding available and there is uncertainty as to whether priority research and development needs are being appropriately addressed.	2.1 This has been addressed with the creation of the Office of the Great Barrier Reef. 2.2 Through the taskforce process, the development of an investment plan and where opportunity arises, the departments are considering the alignment of investment. For example, there is currently an opportunity to refocus the State NRM Investment program money in the Reef catchments on water quality initiatives. Some programs will always be designed for broader purposes of which Reef water quality is one. For example, the broader Queensland-wide water quality monitoring program of which monitoring in the Reef catchments is only a part. 2.3 Some programs, like vegetation management, may have a different primary purpose (biodiversity protection and reduction of carbon emissions) but Reef water quality is a major co-benefit. This does not undermine the value of the water quality contribution. 2.4 For the first time in 2015/16, the government is developing a Queensland Government Reef water quality investment plan. This will be forward looking and include reporting of expenditure. 2.5 There will always be more research required than there is funding. In May, the Minister for the Great Barrier Reef released the Reef Water Quality Research, Development and Innovation Strategy. This helps guide Queensland government investment in research. It aligns with the *Research, Development and Innovation Strategy 2013-2018* designed to support the Australian and Queensland Governments' joint *Reef Water Quality Protection Plan*, which in turn informs the *Reef 2050 Long Term*

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	Sustainability Plan. These planning documents enable prioritised research decisions to be made within the resources.
3. Land Management Practices 3.1 The 2013 Reef Plan places a high emphasis on voluntary actions and market based drivers to achieve outcomes without clear mechanisms to support this approach. 3.2 Industry participation in voluntary programs has been slow, particularly for the Smartcane Best Management Practice program. The rates of participation are not at levels needed to effectively contribute to the achievement of the Reef Plan water quality targets. 3.3 The balance between productivity, profitability and environmental stewardship is tilted heavily towards the former two in order to encourage participation. 3.4 The misalignment of state improvement programs with Australian Government incentive programs limits the ability of Best Management Practice programs to drive change. 3.5 There has been an increase in woody vegetation clearing rates in reef catchments over the last three years. This has the potential to increase run off and sedimentation and therefore have an adverse impact on the achievement of Reef Plan targets. However, data on clearing rates specifically for the riparian corridors that border rivers or streams, which are critical to the health of the reef, are not available.	3.1 The Queensland government has established the GBR Water Science Taskforce to consider the best mix of policy, regulation and market based instruments to meet the water quality targets. This is in recognition that more needs to be done to drive the change required to meet the targets. It is noted that Reef Plan is a joint Commonwealth/State document and is not solely the responsibility of Qld government to implement and thus in part beyond the scope of the audit. 3.2 Since the QAO Report was issued, participation numbers have increased, particularly in the cane industry where almost 30 per cent of the industry are now involved in the program. Cane self assessment participation has increased from 684 growers to approximately 1030, with 18 growers now accredited under the program (versus four at the time of the QAO Report). More than 120,000 hectares are now under the Smartcane BMP, representing approximately one third of Queensland's cane growing area. As at June 2015, under the Grazing BMP, participating grazing enterprises has increased to 1071, with over 1300 additional modules now complete. Accredited grazier numbers have increased with 18 now accredited under the program – an additional 25 or so are now seeking accreditation. Over four million hectares are now under Grazing BMP. The program is receiving wide industry support and continues to expand to areas beyond the reef catchments. Grazing BMP has been trademarked as a quality brand for beef and the program has recently attracted its first corporate partner who

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	will be insisting on its clients completing Grazing BMP. A recent evaluation of the program found that 94 per cent of participants would recommend the program to other graziers. 3.3 The emphasis on productivity and profitability is deliberate to encourage participation. However, this emphasis does not undermine the water quality benefits that can be achieved through full accreditation. Many practice changes that have water quality benefits are also to the financial benefit of the grower. The best way to achieve change is to focus on the win/win benefits. 3.4 The past 12 months has seen a greater effort towards alignment and complementarity between the Commonwealth and the State. The governments are jointly implementing Reef 2050 and the new governance structure set up under Reef 2050 is placing a strong emphasis on coordination and alignment (e.g. meeting of chairs). It is expected that this will result in improved alignment between Commonwealth and State programs. 3.5 Increased clearing may have the potential to increase run off and sedimentation but the correlation is not necessarily direct, e.g. if good ground cover remains. The latest data for riparian corridors has been published in the Reef Report Card, released in September.
4. Monitoring and Reporting Change 4.1 The modelling is complicated and sophisticated, but well respected and provides the opportunity to model potential impacts of the Australian and Queensland governments' investment and actions to the quality of water entering the reef.	4.1 Accepted. It is noted that the Independent Science Panel who provide advice under the Reef Water Quality Protection Plan provided an independent statement in support of the modelling program but endorsed the call for more monitoring. 4.2 Model improvements:

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4.2 Although improvements in the quality and accuracy of data used as inputs to the model have been made, there are further gaps to be closed. 4.3 The land management change data are not collected consistently, verified on the ground or independently audited to provide a high level of confidence in their accuracy. 4.4 Erosion caused by gullying, scalds and stream banks is not well understood or measured despite research indicating it may contribute sizable amounts of sediment entering the reef. 4.5 Ecological processes between the paddock and marine environments, such as those provided by wetlands, are not extensively monitored and well understood. 4.6 The lack of water quality monitoring sites across the catchments results in lower levels of confidence that the quality of water entering the reef is actually improving. 4.7 There is no long-term monitoring to determine the full extent of pollutants leaching into groundwater. 4.8 The level of uncertainty or confidence in reported data is not communicated in the tier one reef report card and is insufficiently reported in the tiers two and three reports.	• As part of the continuous program improvement, updated model input layers are incorporated when they become available. Paddock to Reef Program Phase 2 improvements already implemented include incorporation of: seasonal ground cover, improved soils layer, better climate and flow data, finer resolution topographic data and, expanded water quality monitoring validation data. Improvements to the paddock modelling include more detailed modelling of bananas and grains, as well as representation of water recycling pits in the lower Burdekin region. 4.3 Land management practice change: • The Phase 2 (2013-14 onwards) data capture and reporting process for land management practice changes is now based on the updated water quality risk frameworks which provide a basis for rigorous evaluation. • The vast majority (>95%) of the land management change data utilised in reporting and modelling is now spatially explicit, meaning modellers no longer have to make assumptions about where land management improvements have been made within a sub-catchment. • The updated process now supplies the specific project spatial data (at the paddock level) in a consistent method directly to the modellers, along with a detailed description of the existing farm management and what it is changing to. New quality control and version control measures have also been implemented that have resulted in significant improvements in the quality of the data submitted. • Independent fertiliser and pesticide use reporting from the sugarcane industry is now being used to cross-check reported management practice changes as an additional line of evidence.

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	4.4 Gullies, scalds and stream bank erosion are modelled based on scientifically peer reviewed process understanding. Where updated gully maps are available these have been incorporated (areas included to date are the Normanby, Burdekin and Fitzroy catchments). A significant gully mapping program is continuing and further updates will be incorporated. 4.5 Wetlands play an important ecological and hydrological role in landscape function and water quality. They provide a natural filtration system and destruction of wetlands can result in increased sediment and nutrients flowing to the Great Barrier Reef. The Reef Water Quality Protection Plan 2013 wetland target is: *There is no net loss of the extent, and an improvement in the ecological processes and environmental values, of natural wetlands*. Changes in wetland extent have been detailed in previous report cards and will be reported on again in the upcoming Reef Report Card 2014. A Great Barrier Reef wetland monitoring program has been established to report on changes in wetland environmental values and processes. A pilot project was carried out in 2014 to establish the monitoring program and test the methodology. 4.6 The GBR Water Science Taskforce recommendations due in May 2016 will inform investment allocations from the $100M, including potential extensions to the water quality monitoring network. The design of the monitoring program will need to be considered so that it effectively supports the recommended approach (e.g. voluntary, regulatory or market based). The Queensland Government is currently co-investing with the Australian Government to pilot intensive monitoring at a sub-catchment scale to investigate water quality pollutant changes in response to targeted

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	management. This will inform the potential design improvements to the monitoring network. Additionally, an Integrated Monitoring and Reporting Program steering group has been established with the DG of EHP and CEO of GBRMPA as co-chair. This group is considering how to integrate the extensive number of monitoring programs in the catchment and marine environments and will also consider gaps in the monitoring network. 4.7 Pollutants losses via groundwater, such as nitrogen leaching through soils, are monitored at the Paddock to Reef farm trial sites and modelled through the paddock models. From Phase 2, the catchment modelling now represents this pollutant loss pathway as well. 4.8 Inclusion of uncertainty qualitative confidence rankings was a recommendation from the Phase 1 Paddock to Reef Program review. A graphic feature to communicate confidence in each key indicator has been included with results in the Reef Report Card 2014 (tier 1), due in September 2015.